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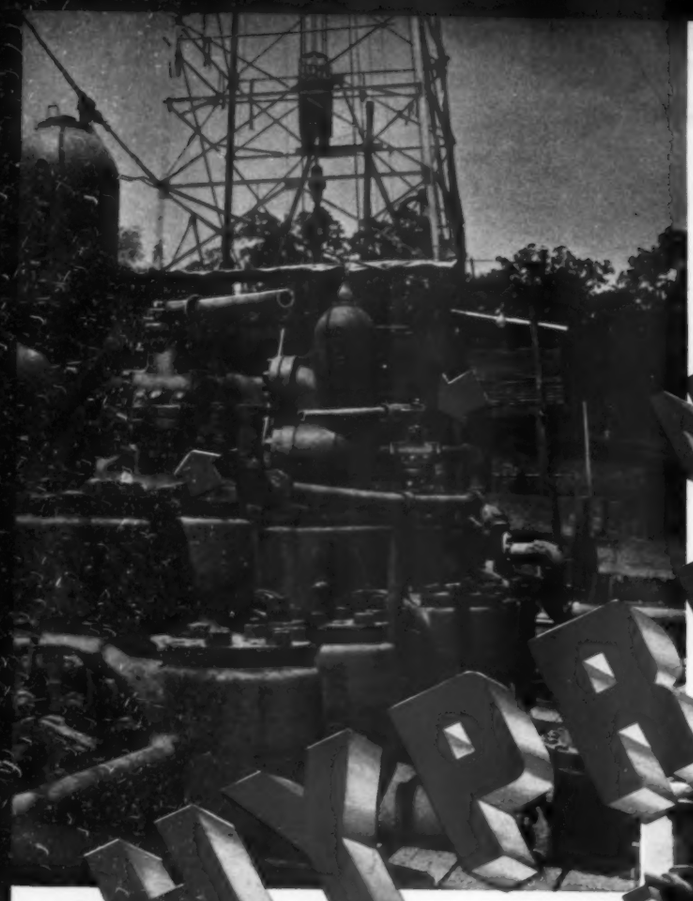

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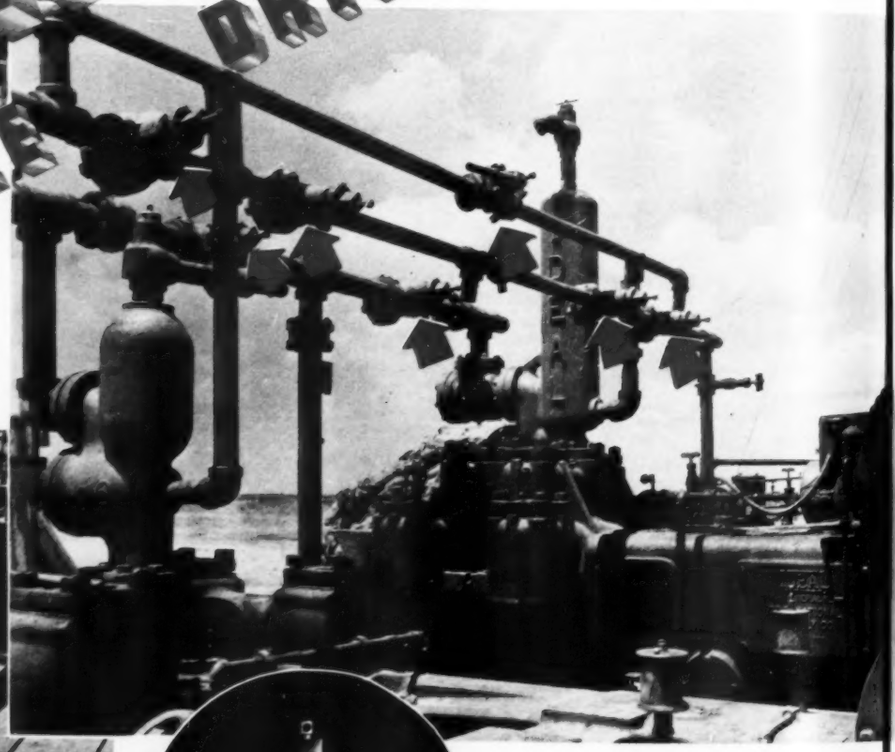

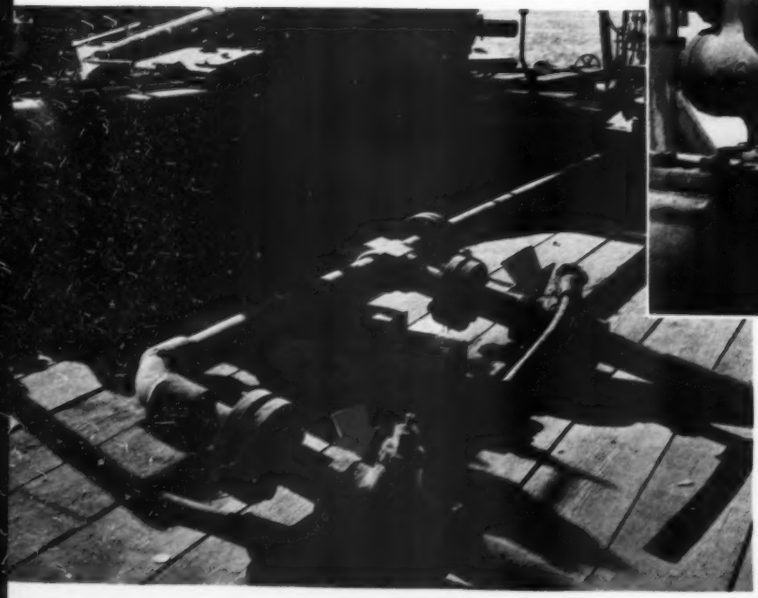

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Rates: Domestic, 1 year, $6.00; 6 months, $3.00. Canadian and foreign, 1 year, $7.00; 6 months, $3.50. All subscriptions are payable in advance

NOVEMBER 21, 1935
VOL. 34, NO. 27

Extra copies of special issues are reserved for subscribers' needs and may be purchased by subscribers at the price of 50 cents per copy

TABLE OF CONTENTS

News Developments

Summary of Situation—By ANDREW M. ROWLEY 7
The Bulletin Board 8
California Out of the Picture as Menace to Industry—By ANDREW M. ROWLEY 9
Washington Passing Ban on Oil to Italy to Oil Companies 10
Our Oil Trade With Canada Not Likely to Be Helped by Tariff Revision—By HUGH D. MALLON 11
Standard of California Places Orders for Bahrein Refinery 11
World Production and Consumption Expected to Reach All Time Peak—By V. R. GARFIAS and R. V. WHETSEL 12
Completion of St. Martinville Producer Confirms Long Cherished Hopes—By NEIL WILLIAMS 13
Eastern Crude Price Advanced 13
Inventories of Refinable Crude Lowest for Several Years. 14
Industry Can Settle California Issue; Little Hope for Legislation—By A. L. WEIL 15
Pipe Line Progress 16
Natural Gasoline News 16
Refinery Projects 17
Natural Gas 17
Far-Reaching Benefits to Industry to Flow From A.P.I. Meeting—By ANDREW M. ROWLEY 18
Editorials 20

Field Operations

East Texas—By L. E. BREDBERG 51
West and North Texas—By L. E. BREDBERG 53-78
Southwest Texas—By GEORGE WEBER 55
Rocky Mountain Area—By TOLBERT R. INGRAM 56
Gulf Coast—By F. L. SINGLETON 59-60
N. Louisiana-Arkansas—By J. R. CRUMPTON 63
Michigan—By PAUL A. ELLIOTT 64
Oklahoma—By JAMES McINTYRE 68
Canada—By VICTOR LAURISTON 71
California—By L. P. STOCKMAN 72
Eastern Fields—By STAFF CORRESPONDENT 76
Kansas—By JAMES McINTYRE 79
Wildcat Operations 81-91

Engineering and Operating

Compressors of Many Sizes and Types Used to Produce Oil With Gas Lift—By S. F. SHAW 22
Power for Pipe Line Pump Is Secured Through Economical Installation—By HAROLD K. IHRIG 24
Greenwood County, Kansas, Operators Build Efficient Paraffin Treating Unit—By HAROLD K. IHRIG 26
Repressuring Applied to Various Oil Producing Formations in Kentucky—By NEWELL M. WILDER 30
Technical Abstracts 31
Operating Ideas 33
Cost of Operating Automotive Diesels Compared With Gasoline Motors—By C. G. ANTHONY 35
Energy Relations Involved in Flowing Through Tubing of Producing Well—By B. H. SAGE and W. N. LACEY .. 38
Rotary-Drilling Line Evaluation Must Be Based Upon Complete Records—By K. N. SAATJIAN and V. V. MASON 41
Combined Repressuring and Flowing Unit Installed in Noak Field, Texas—By GEORGE WEBER 48
Problems From Readers—By T. F. SMILEY 49
Technical Questions—By C. K. FRANCIS, Ph.D. 50

Markets and Prices

Group 3 Market—By T. F. SMILEY 94
New York Market—By C. O. WILLSON 95
A.P.I. Refinery Report 95
Tank Wagon Markets 96
Chicago Markets 96
Refinery Prices 97
Crude Prices 98

Additional Features

Obituaries 16
Personal Paragraphs 92-93
Record of Oil Securities 99
New or Improved Equipment 100-101
Classified Advertising 102-103
Index to Advertisers 104
Oil Man's Calendar 104

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DEPOSITS:

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TOTAL INCREASE	**$22,197,482.81**

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Production Up With Drop in California

By ANDREW M. ROWLEY

CALIFORNIA production registered a decline of 3,000 barrels daily last week due principally to a drop of 4,250 barrels daily at Kettleman Hills, while the country as a whole showed a substantial gain. Efforts are being made to curtail production at Kettleman Hills through state action to prevent waste of natural gas. Regardless of the result of these efforts, however, the industry is thoroughly convinced California's production cannot go much higher than present levels, even with wide open production, and the state has been discounted as a menace to the situation in other areas.

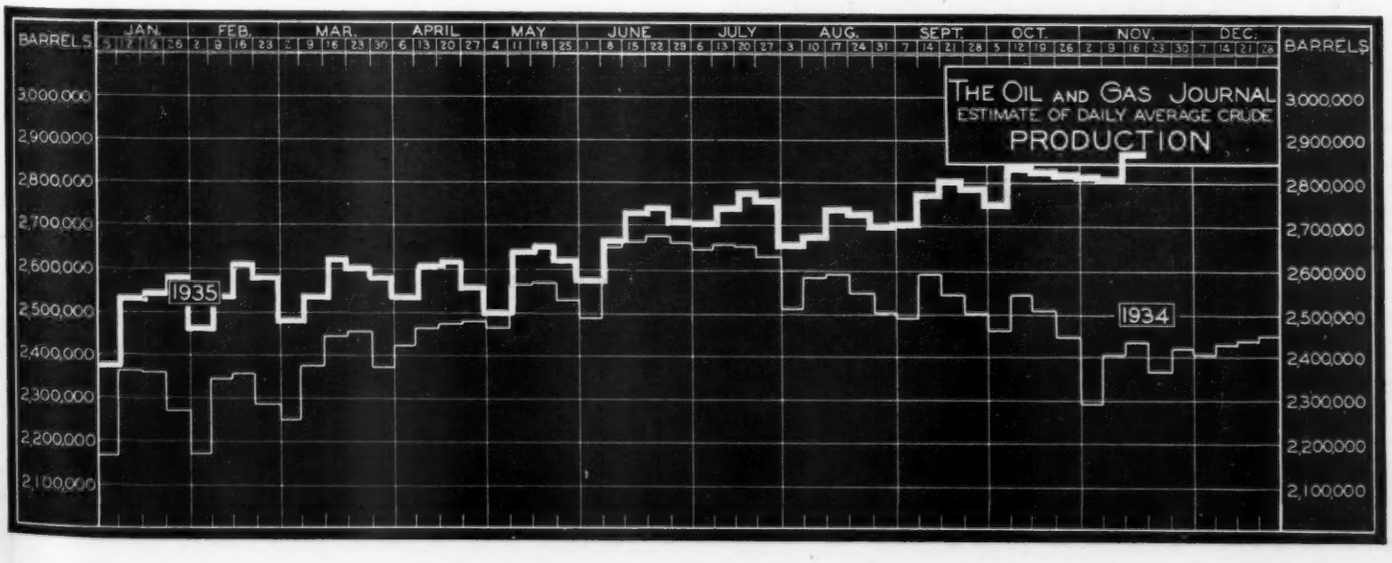
With oil men so optimistic regarding the outlook for the business, there is considerable discussion about the possibility of better prices for crude oil. The more conservative element of the industry, however, deprecate such talk at this time and contend conditions next year will be far better if present price relationships are maintained through the winter. They fear any increase in crude prices now might result in an overproduction during the season of minimum demand which would actually delay announcement of better prices. It is conceded if present conditions are maintained during this winter the industry will enjoy an especially good year in 1936.

Production 2,872,754
Increase 56,740

Two new fields seem to have been opened in Louisiana, the Amerada's wildcat in Rapides Parish making a flow estimated at 500 barrels daily while Tide Water has a well in St. Martins Parish which flowed 40 barrels an hour. Two big wells were completed in the Ferris and Crystal Township sections of the Crystal pool in Michigan. Continental's Jesse well, 4 miles southeast of the Fitts pool in Oklahoma is rated as good for 10,000 barrels daily. Overproduction in East Texas has been reduced to an estimated 20,000 barrels daily.

Daily Average Production for Week Ending Nov. 16, Previous Week and a Year Ago

	Nov. 16 1935	Nov. 9 1935	Nov. 17 1934
Oklahoma City	156,725	144,200	154,875
Seminole-St. Louis	92,725	89,050	93,175
Remainder of State	264,800	257,325	230,475
Total Oklahoma	514,250	490,575	478,525
East Texas	458,998	456,890	428,872
West Texas	163,889	155,428	132,687
Texas Panhandle	58,947	55,327	56,658
North Central Texas	84,022	84,730	88,407
East Central Texas	45,598	44,363	43,052
Gulf Coast—Texas	203,050	192,429	166,223
Southwest Texas	61,692	60,798	57,984
Total State of Texas	1,076,196	1,049,965	973,883
North Louisiana	31,040	30,800	24,045
Gulf Coast—Louisiana	129,850	127,530	80,047
Total Louisiana	160,890	158,330	104,092
Santa Fe Springs	54,500	55,000	40,200
Long Beach	79,000	76,500	65,200
Mountain View	39,000	38,250	13,700
Kettleman Hills	112,000	116,250	56,500
Remainder of State	396,500	398,000	319,400
Total California	681,000	684,000	495,000
Kansas	144,600	135,675	123,900
Arkansas	29,575	29,675	30,220
Eastern Fields	104,500	105,000	103,150
Michigan	49,693	50,733	25,855
Rocky Mountain Area	112,050	112,061	96,250
Total United States	2,872,754	2,816,014	2,430,875



THE BULLETIN BOARD

Five Men in California could settle the oil muddle there if they "would sit down together and forget their personal animosities and their megalomania, their desire to be big shots in the oil industry," A. L. Weil told the A.P.I. at Los Angeles. He left the industry to guess their names and there has been a lot of guessing, but no sitting down together yet.

World Production of crude this year will be the highest in history, V. R. Garfias and R. V. Whetsel predict in their annual preliminary estimate. So will world consumption, over 5 per cent greater than in 1934. Yet they throw in the damper that the United States will more than double its overproduction while the rest of the world only slightly reduced its excess output.

California is no longer a menace to the oil industry in the rest of the country but only to itself by depleting its reserves for its own consumers. Production cannot increase much over the present total and not for long. That's what's worrying California majors most just now.

Crude Production reached its highest in two years during September according to the Bureau of Mines but so large was the demand that 5,000,000 bbls. were withdrawn from storage, reducing inventories for refinable crude to the lowest in several years. Isn't that something?

Exporting Oil Companies feel Washington is trying to "pass the buck" to them on shutting off oil to Italy. An existing treaty pledges both countries not to prohibit importation in either country. Also if American companies stop supplying Italian consumers under contract, except upon compulsion by a governmental embargo, what chance would they have for Italian business after the war?

Continued Waste of that billion feet of gas daily in the Texas Panhandle is attributed by H. M. Stalcup to litigation over the new conservation act holding up the Railroad Commission's orders. At the same time, he adds, it is ruining oil fields by exhausting energy required for lifting the oil.

Eastern Crude Prices raised 15 cents encouraged optimists elsewhere who promptly inquired "How about the Mid-Continent?" All, we hope, in good time.

Refinery Equipment orders for a 10,000-bbl. plant on the island of Bahrein in the Persian Gulf placed by Standard of California are causing speculation. Mr. Kingsbury's Bahrein production was discussed when the world oil conference was on in New York recently. Does the new plant indicate no agreement was reached?

The Tariff Revision Treaty with Canada has Washington guessing whether it will prove a boon or a boomerang to the oil business. New York thinks it will make no material difference as the reductions on refined products are not enough to cause Canada to import more while it can continue to import crude free.

Demand for Crude in December, expected to reflect the usual seasonal decline in gasoline consumption, was surprisingly nearly 20,000 bbls. daily higher in Texas according to nominations filed by purchasers. And this time they may really need it.

Runs Are Curtailed by farseeing refiners now not because of government command but because they realize that they are serving their own best interests that way. Upon the degree of cooperation in this particular depends maintenance of the stabilized gasoline market in all areas.

California Out of the Picture as Menace to the Industry

By ANDREW M. ROWLEY

LOS ANGELES, Nov. 16.—California is not a menace to the stability of the petroleum industry in the remainder of the United States and will not be for a long time, if ever.

This state has a ready market for all the crude it now is producing and for any increase in production which may develop. And production will not increase much over the present level, simply because it is not within the ability of the fields to do so. In fact, if the present rate of output is maintained for 60 days, the figures on production then will begin to show a decline, and that decline will not be due to any curtailment—it will mean the state has passed its peak in production and is definitely on the down grade.

California oil men and executives of the larger companies when asked what they think of the outlook in California, invariably answer: "It is good." That was the answer given by K. R. Kingsbury, president of the Standard Oil Co. of California; L. P. St. Clair, president of the Union Oil Co. of California, and numerous others.

The whole situation in a nutshell is that when the various fields were opened to capacity production, following the breaking down of curtailment efforts, these fields failed to produce what most operators had believed to be their rated potential and the industry in California then realized, possibly for the first time, that the state does not have anywhere near its formerly rated potential producing capacity.

The rated potential had been placed anywhere from 1,100,000 to 1,500,000 bbls. daily. Executives of the larger companies now say the state cannot produce more than 700,000 or at the most 750,000 bbls. daily for more than 60 days. And no new fields are being discovered and there are no immediate prospects of opening any new reserves.

Mr. St. Clair stated the breaking down of curtailment and the opening of the different fields to full capacity production did one good thing for the oil industry in California. It showed conclusively that figures on potential production were a myth and made everyone realize the future held an entirely different picture than many had taken for granted.

Mr. St. Clair added he is not worried at all about overproduction in California but he is worried about where the state will get adequate crude supplies to meet its requirements two or three years from now. And as for shipping crude around to the Atlantic or Gulf ports, he laughed at such a prospect as ridiculous because the state will have enough to do to provide sufficient crude for its own requirements without having any to ship to other markets in the United States.

He said the same holds true in regard to gasoline shipments and predicted that next year will show a very substantial decrease in gasoline shipments and that when the present contracts for gasoline shipments of some companies expire, these contracts will not be renewed, as California companies will need this gasoline for their own market requirements in the Pacific coast territory.

Oil men out here point to the Signal Hill field as a concrete example of what has happened in many areas throughout the state. That field was selected as an example because it is so well known. It had a rated potential of 125,000 bbls. a day and all the operators in the field and most everyone in the oil business in the state actually felt the field could produce 125,000 bbls. a day, possibly for a long period. It is a big field.

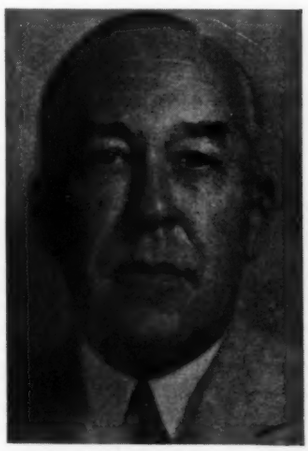
"I am not worried regarding overproduction in California, but I am worried deeply about where we will get sufficient crude oil to fill our requirements two or three years hence." --- *ST. CLAIR*

Signal Hill was opened to full capacity a month or so ago. There has not been any curtailment in production there. Yet the greatest daily production the field has made since opened up has been between 76,000 and 80,000 bbls. a day. It can't make more than 80,000 bbls. a day.

There is not much curtailment in California at this time. Some fields, owned almost exclusively by one company, are curtailed, for instance West Coyote which is controlled by the Standard. But there is no curtailment in the so-called town lot areas—the large flush fields such as Signal Hill, Long Beach, Huntington Beach, Santa Fe Springs, etc. Kettleman Hills is running wide open. It has been producing over 100,000 bbls. daily. Whatever curtailment has existed in that field is due solely to lack of pipe line facilities to handle the crude, the total facilities being 120,000 bbls. a day or a little less.

And the present rate of production, without curtailment, is ruining at least three big fields in the state —Kettleman Hills, Mountain View and Signal Hill. I was told the pressure in the north end of the North Dome of Kettleman Hills, in what is known as the Huffman area, dropped 200 pounds during the past month or six weeks. The record shows the pressure in this field has dropped 1,200 pounds in two years prior to the recent opening up of the North Dome to unrestricted production. This rapid drop in pressure, with the blowing of gas into the air and

"Do not look at the figures on California's crude oil production without, at the same time, looking at the figures on stocks . . . Our stocks of crude oil now are lower than for years." --- *KINGSBURY*



water infiltration, certainly is not doing that field any good and a continuation of its present production will soon cause Kettleman Hills to pass out of the picture as a menace to the industry in California.

The question which naturally arises is: "Knowing this condition now, why don't the operators curtail their production and save it for future requirements at a far better price than now prevails?" Differences of opinion, jealousies and other elements rather common in the oil business, including the fact operators in some of the fields —not Kettleman Hills—are in the business only temporarily and want to get all the money they can quickly, all enter the picture.

Five Men Could Settle It

A. L. Weil, president of the General Petroleum Corp., in his address before the general session of the annual meeting of the American Petroleum Institute here this week, in speaking of the situation in Kettleman Hills said: "If five men, at most, who are interested in the Kettleman Hills fields, would sit down together and forget their personal animosities and their megalomania, their desire to be big shots in the oil industry, this whole situation could be cleared up in a single noon-day session."

Mr. Kingsbury cannot see why anyone outside of California should be the least bit worried about the California situation. He said: "Have we shipped any crude oil to Atlantic or Gulf ports? No. Then why should the Mid-Continent or eastern or gulf operators worry about California? Tell them to watch figures on stocks at the same time they are watching figures on production. We have drawn crude from storage and no refinable crude is going to storage. Our crude oil stocks are the lowest in years and our stocks of gasoline are really at a figure below a good economic level. We have a market for all we are producing and will absorb all the production out here. In fact our company would be willing to store crude oil."

Mr. St. Clair has a very definite idea as to the basis for crude prices. His company on October 26 increased existing crude prices to about double of the schedule which went into effect August 29. When asked why he increased crude prices when production was mounting he said: "You cannot correct an evil like that by reducing crude prices. The idea that crude prices should be based on returns from products is the greatest fallacy of the business. Crude prices should be based on a level which would permit a fair profit to the operator and products prices should then seek their own competitive level.

"When crude prices were reduced August 29 chaos threatened the industry here. Many buyers at once started paying premiums and companies were threatened with loss of connections. Higher prices were necessary and crude prices should be set at a fair and reasonable level regardless of products prices."

Anxious About Future

Mr. St. Clair pointed to the fact that since the beginning of the industry in California in 1876 when commercial production was first recorded, the state has produced 4,398,000,000 bbls. of oil. He said the recent survey of reserves gave California about 3,500,000,000 bbls.

"Keep in mind," he said, "even if we have that much oil left to be recovered, most of these fields will produce for many years, some of them maybe 50 years as strippers. But with our market requirements even at this season of the year—right now—within possibly 20,000 bbls. daily of present production, what is going to be the situation two or three years from now when the natural decline in output has set in? In other words, this quantity of oil would be produced over a long period while our requirements now are far greater than such a yearly average and our output under present conditions and outlook at the end of 10 years will be far less than what we need."

J. E. Eaton, a consulting geologist, seemed to express present sentiment among oil men here when he said there have been periods of overproduction in California but none of over-supply. Mr. Eaton said there will be a crude shortage in California within two or three years if no new fields are discovered.

In the matter of conservation legislation which would give the state control over production, it is very doubtful if such legislation will be enacted in California. A large majority of the oil men favor such legislation but the public has been sold on the idea such legislation would mean higher gasoline prices. The voters seem to regard saving a dollar a month on their gasoline bill to be far more important than conserving the state's crude oil supply.

Gov. Frank T. Merriman came to Los Angeles last Thursday and had a conference with Tom Anglin, official representative of Gov. E. W. Marland of Oklahoma to the A.P.I. meeting and who is a member of the Interstate Compact Commission from Oklahoma. Col. Ernest O. Thompson, chairman of the Railroad Commission of Texas and a member of the Interstate Compact Commission from Texas was in the conference with Governor Merriman.

Governor Merriman stated he favored cooperative efforts among the states in matters relating to the petroleum industry and that he opposed Federal control of the oil industry. He promised to send an official representative from California to the meeting of the Interstate Compact Commission to be held in Oklahoma City on December 13. But he was rather non-committal regarding California's ratifying the Interstate Compact. The legislature does not meet out here until 1937 although there might be a special session before that time.

Washington Sidestepping Ban on Oil for Italy to Export Oil Companies

By C. O. WILLSON

NEW YORK, Nov. 18.—The warning issued to American exporters of war materials to Italy by Secretary of State Hull still leaves oil exporting companies as confused as ever as to what is expected of them. Certain companies from the time the neutrality act was passed have endeavored to secure an official expression as to oil products. The presidential ban was limited to "arms, ammunition and implements of war" and it was assumed that trading in oil along with other products of similar classification, could continue.

The latest statement says that oil, copper, trucks, tractors, scrap iron and scrap steel "which are essential war materials, although not actually arms, ammunition or implements of war" are being exported to Italy in increasing quantities and concludes "this class of trade is directly contrary to the policy of this government as announced in official statements of the president and secretary of state, as it is also, contrary to the general spirit of the recent neutrality act."

This is apparently a warning to oil companies selling oil products to Italy. The fact there has been no official embargo as in the case of actual war implements has left the feeling there is a shifting of responsibility to private oil interests that properly belongs to the government.

The exporting companies have indicated their desire to carry out any official policy adopted by the government under the neutrality act. An embargo on oil products would stop shipments immediately. As long as that is not ordered it is difficult to see how the companies, several of which have had trading relations with Italian concerns, including the government, for many years and which also have substantial investments in Italy, can properly stop shipments. As long as no embargo exists the Italian buyers have a right, it is pointed out, to expect a continuance of shipments. It has been indicated in Italian circles that refusal to ship in lieu of an official embargo would be considered an unfriendly act which would jeopardize future trading relations with these companies.

Failure of Washington to place a ban on shipments of oil and products to Italy has left the suspicion that the government cannot take such action under the neutrality act and in effect is asking the exporting companies on their own initiative to carry out a policy which has no legal status at this time. There are other confusing angles. The League of Nations sanctions do not include oil or its products. It has been indicated, however, oil would be added to the list provided the United States would also stop shipments. Thus this country is placed in the position of assuming responsibility as to whether shipments of oil shall continue.

A treaty between Italy and the United States in 1871 has been dusted off in the past two weeks. This treaty pledges both countries not to levy discriminatory duties on the other's products, "nor shall any prohibition be imposed on the importation or the exportation of any articles produced or manufactured in the United States or in Italy which shall not equally extend to all other nations." The question has been raised whether this treaty was not violated in the embargo on war materials to Italy and whether an embargo on oil and other products would not be a further violation.

It is apparent oil exporting oil companies are in danger of being made the "goat" in a situation in which full responsibility should rest with their governments. Unfortunately statements emanating from Washington have created the impression that the oil industry of this and other countries is a beneficiary of large war profits. The war needs of Italy are of no significance in world markets where 3,400,000 bbls. are being consumed daily. Distributed among several companies it has been of minor importance to any one and total volume has not been large enough to have any general market significance. Export prices have changed only fractionally over the past year. Prices on some products indeed are lower than they were a year ago.

The only objective of the companies is to protect their peace time investments in Italy and be in a position to resume trading after the war. Specifications and delivery points have indicated certain products were to be used as war materials while other shipments have been to supply a domestic trade in Italy. The latter have constituted the bulk of shipments and in most cases have been routine transactions between outside companies and their subsidiaries.

Crude Stocks

WASHINGTON, Nov. 18—Stocks of domestic and foreign crude on November 9 were reported by the Bureau of Mines at 299,722,000 bbls., a decline of 1,261,000 from the preceding week.

Stocks of domestic crude declined by 1,372,000 bbls., while foreign crude increased 111,000.

Crude production remained unchanged at a daily average of 2,845,000 bbls. Daily average runs to stills were 2,720,000 bbls., a decline of 30,000. Daily average imports were 91,000 bbls., compared with 100,000 for the preceding week.

Crude Stocks	Nov. 9	Nov. 2
Penn. grade	4,721,000	4,705,000
Other Appalachian	834,000	801,000
Lima, N. E. Ind., Mich	1,402,000	1,512,000
Illinois, S. W. Ind.	11,159,000	11,137,000
N. La., Ark.	10,595,000	10,633,000
S. Texas, S. E. New Mex.	29,321,000	29,555,000
East Texas	21,828,000	23,544,000
Other Mid-Continent	132,882,000	133,323,000
Gulf Coast	25,814,000	25,137,000
Rocky Mountain	26,796,000	26,840,000
California	31,362,000	30,899,000
Domestic	296,714,000	298,086,000
Foreign	3,008,000	2,897,000
	299,722,000	300,983,000

Oil Trade With Canada Not Likely to Be Helped Much by Tariff Treaty

By HUGH D. MALLON

WASHINGTON, D. C., Nov. 19.—Whether the trade treaty with Canada will prove a boon or a boomerang for the petroleum industry cannot now be realized, but it is certain the difficulty met by the industry in trading with Canada has not been eliminated. The so-called "dumping duty," or the provision of the Canadian law which allows the authorities to set arbitrary valuations on products brought into Canada is still in effect on petroleum products, although the tariff has been reduced.

Provision has been made which assures the petroleum industry being given tariff rates equivalent to the "most favored foreign nation" rates, although there is no assurance the rates may not be raised whenever the Canadian government finds the American traiff rate is lower than allowed other nations. In the past high tariff rates and arbitrary valuation of American exports, has greatly curtailed shipments of motor fuel and lubricating oil, as evidenced by the decrease in exports from $19,982,000 in 1930, to $4,154,000 in 1935. The agreement goes into effect January 1, 1936.

Changes for the better in the valuation system are assured, it is claimed, either by the agreement, or by a note of the Canadian government accompanying it. This question was raised due to a growing system by that government of arbitrarily applying assessments which exceed the invoice values on imported goods. This system had been applied to petroleum and petroleum products, and has been particularly onerous to Pennsylvania refiners, who, because of their convenience to the Canadian market, had enjoyed a large share of this business.

The valuation system, besides raising arbitrarily the import duty on gasoline and other petroleum products often meant that the difference between the invoice rate and the value fixed by the Canadian customs had to be paid as a so-called dumping duty. The Canadian note definitely states the government will sponsor legislation amending the sections of the customs act which have been particularly onerous, and pending such amendment, will attempt by regulation to alleviate the situation. President Roosevelt has stated much of the hardship heretofore borne by industry will be withdrawn by virtue of the agreement.

There was no change in existing United States tariffs on imports of petroleum and its products from Canada, because such imports are practically negligible.

Changes in Canadian Rates

The products, with the tariff under the agreement, as well as the previous tariff follow:

Illuminating oils, over 30 cents a gallon, ad valorem, present duty, 20 per cent, new duty 17½ per cent.

Lubricating oils, less than 25 cents a gallon, present duty per gallon 2½ cents, new duty 2¼ cents.

Petroleum (tops), gas oil, except gasoline, between .8235 and .775 specific gravity, present duty per gallon 1½ cents, new duty 1¼ cents.

Refined gasoline, kerosene, under .8235 specific gravity, present duty per gallon 2½ cents, new duty 2¼ cents.

Lubricating oil not otherwise provided for and axle grease, old duty ad valorem 20 per cent, new duty 17½ per cent.

Petroleum preparations for toilet and medicinal use, old duty ad valorem 25 per cent, new duty 22½ per cent.

It is the hope of the administration that under this agreement, with mutual lowering of import duties trade with Canada can be placed where it was in the fiscal year 1930 when the petroleum industry exported over $14,000,000 worth of refined petroleum products.

New York View

NEW YORK, Nov. 18.—The changes made in tariffs on refinery products imported into Canada from the United States will not result in any material change in the movement of oil products according to opinions obtained here from those connected with oil operations in both countries.

It is not believed the reductions are large enough, in view of crude and casinghead gasoline continuing on the free list, to bring about an increase in imports of finished products with a corresponding decrease in crude imports. Only 11 per cent of the gasoline consumed in Canada is imported, 13 per cent fuel oils and smaller amounts of other products, except lubricating oils which amount to approximately 40 per cent. The tariff on lubricating oils is small in comparison to the selling price and several companies which have built refineries in Canada continue to import lubricating oils rather than build plants to manufacture the oils. The small reduction will make this importation slightly more attractive.

The next most important item in the Canadian tariff are the 1½ cents per gallon rate on most fuels and 2½ cents on refined gasoline and kerosene. The reductions of one-fourth cent are not large enough to make importation of these products attractive. The advantage will continue with the Canadian company which refines these products from crude brought into Canada, duty free. Canada for several years secured the bulk of its petroleum products from the United States and is the largest buyer of crude. In September imports of petroleum products totaled $4,766,804, of which the United States supplied 77 per cent. Crude imports totaled 3,200,506 bbls., and of this 2,799,956 bbls. came from the United States.

It is possible that more important changes will be made later, in Canadian tariffs on crude oil and refinery products. The Canadian Tariff Board at this time is conducting an investigation regarding the effect of present tariffs in relation to consumer markets. In regard to petroleum it has been indicated in official circles that no change would be made which would jeopardize the present position of petroleum refining in Canada which means a continuance of tariffs.

The changes in the tariff rates on other products may work to the advantage of the Canadian petroleum industry and the equipment manufacturers in the United States. Duties on heavy machinery and other equipment will be reduced, an advantage to manufacturers in the United States which sell fabricated equipment and supplies to Canadian refiners.

Standard of California Places Orders for Refinery on Island of Bahrein

Constructing Bahrein submarine terminal

The Standard Oil Co. of California announced last week that it would build a new refinery on Bahrein Island of the Persian Gulf where the company through its subsidiary, the Bahrein Petroleum Co. has been developing a large concession since 1932, when the discovery well was drilled. It was stated that the first unit of the refinery would be in operation by next July and that it was designed so that the capacity could be doubled later. The principal products of the refinery will be gasoline, kerosene, diesel oil and fuel oil.

The Standard of California announcement follows a recent conference in New York at which it is understood plans were discussed to provide a market for the Bahrein Island production of the California Standard. Standard Oil Co. of New Jersey, Shell and Anglo-Iranian companies which are the principal producers, refiners and distributors in that area are said to have participated in the conference to work out outlets for the new Bahrein Island production which would not disturb existing markets. It was understood that a tentative plan was agreed upon although the details were not announced. It is now assumed that if such an agreement is entered into it will provide for the distribution by one or more of these companies of the products of the new Bahrein Island refinery.

The Standard Oil Co. of California acquired a concession of 100,000 acres in Bahrein in 1930. The concession is exclusive. After a geological survey, drilling was started in 1931, and oil was discovered in June, 1932. Today there are 16 producing wells and 6 drilling. It is estimated that more than 10,000 acres have already been proven as oil bearing, and that the field now has a potential production of 50,000 bbls. a day. Production has recently approximated 6,500 bbls. of crude oil daily.

Bahrein, the company announcement points out, is a strategic location for a refinery so far as markets are concerned. There is large consumption of petroleum products in countries eastward to Singapore, including India, with its population of 400,000,000, westward to Suez, and south along the east coast of Africa and South Africa. Trade may also be developed in the Far East.

The Bahrein Islands constitute an independent sheikhdom, now governed by Sheikh Hamad, of the Khalifah family, some member of which has ruled here ever since 1783, when the powerful mainland tribe to which it belonged, the Utibi Arabs, seized the land from the Persians. Since 1861, Great Britain has acted as friend and protector of the ruling sheikh, although, strictly speaking, Bahrein is not a British protectorate. The island of Bahrein is some 30 miles long by 10 miles wide, and has an area of 208 square miles. The total population of the island is estimated to be around 175,000 people.

World's Production and Consumption Expected to Reach All Time Record

By V. R. GARFIAS and R. V. WHETSEL
Foreign Department, Cities Service Co.

Preliminary figures indicate that world production of petroleum and related liquid fuels in 1935 will be the highest in the history of the industry and may total 1,669,000,000 bbls., about 1,610,000,000 bbls., of which will be crude oil. Production in the United States will probably increase 7.8 per cent; output elsewhere should show a gain estimated at 5.2 per cent, while the overall increase will aggregate close to 6.8 per cent over the output of 1934. The increase in foreign countries is largely due to the production of the Iraq fields, which may reach an output of 25,000,000 bbls. this year. Venezuela's output will likely be 5 per cent higher than in 1934, while gains will also be made in Mexico, Peru and Colombia. The production of Russia will probably remain stationary during 1935 and the output of the Rumanian fields should be fractionally lower.

World consumption of petroleum, its products and related fuels during 1935, it is estimated, will reach an all-time peak of 1,579,000,000 bbls., which figure is about 5.3 per cent higher than in 1934. Consumption in the United States should be about 5.4 per cent higher, while outside this country the increase is estimated at 5.2 per cent. The consumption in Italy, Russia, England, France and Germany should average over 5 per cent.

It must be kept in mind that during 1934 world production of petroleum and related fuels exceeded demand by approximately 64,000,000 bbls., and that this year the excess output may reach 90,000,000 bbls. Considering the domestic situation in the United States alone, overproduction totaled 26,000,000 bbls. in 1934 and is estimated will be 50,000,000 bbls. in 1935. Outside the United States output exceeded consumption by 37,000,000 bbls. in 1934, compared to a probable figure of 39,000,000 bbls.

Exports from the United States in 1935 should show a favorable balance over imports of close to 71,000,000 bbls., compared to 64,000,000 bbls. in 1934. Such gain is due largely to increasing shipments of crude oil. Exports of refined products from the United States will probably be slightly in excess of those in 1934, but this probably is a temporary situation brought about by international unrest. Total oil stocks in the United States will be reduced by about 20,000,000 bbls. in 1935, compared to a 37,848,000-bbl. reduction during the previous year. Elsewhere the excess of imports over exports and excess of production over demand indicate an unfavorable balance of some 110,000,000 bbls. in foreign countries during 1935, compared to 101,000,000 bbls. in 1934.

This difference is largely due to increase in stocks and partly at least remains, in our imperfect knowledge of consumption statistics, as an unaccountable balance.

V. R. GARFIAS

It is therefore apparent that notwithstanding an increase in consumption to a new peak, the world petroleum industry this year will make little or no progress toward a reasonable balance of supply and demand and will find itself at the end of 1935 in a less favorable statistical position than at the corresponding time in 1934. In the United States withdrawals from storage have been made possible by increased exports, which no doubt are adding to stocks in foreign countries, thus creating an unfavorable situation abroad that will be reflected sooner or later in the United States. Hence it is evident that the time has not yet arrived when the American petroleum industry can in any way let up on its curtailment program; perhaps even more drastic measures may yet be necessary before the dangers of overproduction have entirely passed.

This curtailment, particularly in the United States, is doubly justified by the necessity of conserving the inadequate proven domestic reserves which, as compared to present peak consumption, have never been as low as they are at present. We thus find the industry at present in the paradoxical position in which peak consumption and inadequate reserves are more than counteracted by immediate and unjustifiable overproduction.

Table 1 gives actual production in 1934 and the estimates for 1935. Crude output is shown separately from its related fuels, natural gasoline, benzol, shale oils and alcohol used as motor fuel.

Table 2 estimates world consumption of petroleum, its products and related fuels in the 50 ranking countries.

TABLE 2—CONSUMPTION OF PETROLEUM, ITS PRODUCTS AND RELATED FUELS

	Barrels	
	1934	1935
United States	920,164,000	970,000,000
Russia	117,300,000	123,000,000
United Kingdom	72,170,000	75,700,000
France	40,555,000	42,700,000
Canada	34,917,000	35,900,000
Germany	26,877,000	29,700,000
Japan	22,815,000	24,800,000
Argentina	21,164,000	22,100,000
Mexico	16,326,000	16,800,000
Italy	14,234,000	15,800,000
Rumania	14,890,000	15,200,000
British India	14,252,000	14,900,000
Dutch West Indies	13,381,000	14,000,000
Australia	10,500,000	10,800,000
Dutch East Indies	8,141,000	8,600,000
Holland	7,826,000	8,400,000
Persia	7,120,000	7,300,000
Sweden	6,347,000	6,800,000
Spain	6,122,000	6,700,000
Brazil	6,180,000	6,300,000
China	6,774,000	6,100,000
Venezuela	5,978,000	5,890,000
Egypt	5,146,000	5,400,000
Denmark	4,990,000	4,860,000
Belgium	4,613,000	4,800,000
Union of South Africa	4,082,000	4,400,000
Cuba	3,680,000	3,800,000
Norway	3,773,000	3,600,000
Philippine Islands	3,400,000	3,500,000
Switzerland	3,261,000	3,400,000
Czechoslovakia	3,146,000	3,300,000
New Zealand	3,082,000	3,200,000
Hawaii	2,860,000	3,000,000
British Malay	2,840,000	3,000,000
Poland	2,697,000	2,800,000
Trinidad	2,651,000	2,800,000
Iraq	2,207,000	2,800,000
Uruguay	2,410,000	2,500,000
Chile	2,300,000	2,450,000
Austria	2,120,000	2,400,000
Algeria	2,060,000	2,100,000
Panama Canal Zone	2,050,000	2,100,000
Irish Free State	1,933,000	2,100,000
Peru	1,910,000	2,100,000
Greece	1,563,000	1,600,000
Porto Rico	1,430,000	1,500,000
Hungary	1,190,000	1,300,000
Portugal	1,274,000	1,300,000
Finland	1,184,000	1,300,000
French Morocco	987,000	1,000,000
Others	30,145,000	33,260,000
Total	1,499,017,000	1,579,160,000

TABLE 1—WORLD PRODUCTION OF PETROLEUM AND RELATED FUELS (BARRELS)

	1934			1935			
	Crude petroleum	Related fuels	Total	Crude petroleum	Related fuels	Total	Remarks
United States	908,065,000	38,264,000	946,329,000	982,000,000	38,500,000	1,020,500,000	7 8/10 per cent increase
Russia	167,748,000	800,000	168,548,000	168,000,000	800,000	168,800,000	
Venezuela	142,072,000	620,000	142,692,000	149,000,000	700,000	149,700,000	4 9/10 per cent increase
Rumania	62,066,000	1,000,000	63,066,000	61,400,000	900,000	62,300,000	1 1/8 per cent decrease
Persia	52,665,000	870,000	53,535,000	51,400,000	870,000	52,270,000	2 1/3 per cent decrease
Dutch East Indies	42,292,000	1,800,000	44,092,000	43,000,000	1,800,000	44,800,000	1 6/10 per cent increase
Mexico	38,167,000	410,000	38,577,000	40,000,000	500,000	40,500,000	5 per cent increase
Iraq	7,192,000	.....	7,192,000	25,000,000	.....	25,000,000	Peak
Colombia	17,341,000	400,000	17,741,000	18,000,000	400,000	18,400,000	Peak
Peru	14,144,000	1,000,000	15,144,000	16,400,000	1,200,000	17,600,000	Peak
Argentina	14,045,000	280,000	14,325,000	14,700,000	300,000	15,000,000	Peak
Trinidad	10,894,000	84,000	10,978,000	11,300,000	90,000	11,390,000	Peak
British India	8,997,000	100,000	9,097,000	9,000,000	100,000	9,100,000	Peak
Germany	2,267,000	5,780,000	8,047,000	3,100,000	5,900,000	9,000,000	Peak
British Borneo	4,621,000	80,000	4,701,000	5,000,000	100,000	5,100,000	Peak
Poland	3,697,000	532,000	4,229,000	3,750,000	500,000	4,250,000	
Sakhalin	2,400,000	.....	2,400,000	2,400,000	.....	2,400,000	
Japan	1,799,000	130,000	1,929,000	1,870,000	130,000	2,000,000	
Ecuador	1,655,000	.....	1,655,000	1,700,000	.....	1,700,000	
Canada	55,000	1,211,000	1,266,000	70,000	1,250,000	1,320,000	
Egypt	1,479,000	45,000	1,524,000	1,240,000	40,000	1,280,000	16 per cent decrease
Others	1,253,000	4,569,000	5,827,000	1,700,000	4,700,000	6,400,000	
Total	1,504,859,000	57,975,000	1,562,834,000	1,610,030,000	58,780,000	1,668,810,000	New peak

Completion of St. Martinville Producer Confirms Long Cherished Dreams

By NEIL WILLIAMS

HOUSTON, Tex., Nov. 18.—Completion by Tide Water Oil Co. of a producing well at St. Martinville, St. Martin Parish, Louisiana, not only has opened a new field but has proved an area which has been teasing operators for years. Numerous attempts, inspired by tell-tale gas seeps and paraffin dirt, together with several geophysical pictures, have been made to find oil there but until Tide Water drilled its well there had been no production.

By coincidence, the man instrumental in getting Tide Water to take its block and drill, was one of the first attracted to the area. He is W. F. Bowman, chief geologist, Gulf Coast division, of the company, who, as early as 1924 and 1925, when a geologist for Rio Bravo Oil Co., became interested in the gas speeds, north of St. Martinville. In the intervening years, he has consistently watched the area, been convinced of the existence of a field, and when the occasion arose, recommended that Tide Water shoot the area again and take the block.

This is Tide Water's first strike of its own on the Gulf Coast. The company entered the coastal district during the Conroe boom, entrenching itself by purchase of extensive proven and semiproven property. It since has acquired several blocks and considerable acreage but has had no production outside Conroe.

Following recommendations of Mr. Bowman and others, based on a knowledge of the seeps and past geophysical work, Tide Water made arrangements with Independent Exploration Co. to make a new reflection shooting survey. Before the work was far along, sufficient indications were given that Tide Water decided to block the area. The "high" was south and a little west of the town and corresponded to some extent to an old refraction picture.

Although Standard Oil Co. of Kansas, through a subsidiary, Coastal Plains Oil Co., and Continental Oil Co., previously had acquired several tracts which could not be leased, a block of approximately 3,500 acres was completed early this year and Independent Exploration Co. detailed the structure with reflection shooting.

The first test, the discovery, was in the Smedes tract in section 57-11s-6w, 1½ miles south of St. Martinville at a point considered about the highest part of the structure. It started drilling in September. The objective was the deep sands productive in the Bosco field, 20 miles northwest. With the Oligocene horizons expected around 7,100 feet, the test was prepared to go to 9,000 feet.

Drilling was interrupted when the test encountered a Miocene sand at 5,542-79 feet with a total depth of 5,582 feet. At that depth, 9⅝-inch casing was run to 5,555 feet, and after plug had been drilled and screen set, the well was brought in flowing initially at the rate of 135 bbls. through a three-sixteenths inch choke. At latest report it was flowing 8 bbls. of pipe-line oil hourly with an estimated 5,300,000 feet of gas daily, through a three-eighths inch choke on the tubing. Tubing pressure was 1,970 pounds and casing pressure, closed in, was 2,090 pounds. The oil is 32.1 gravity.

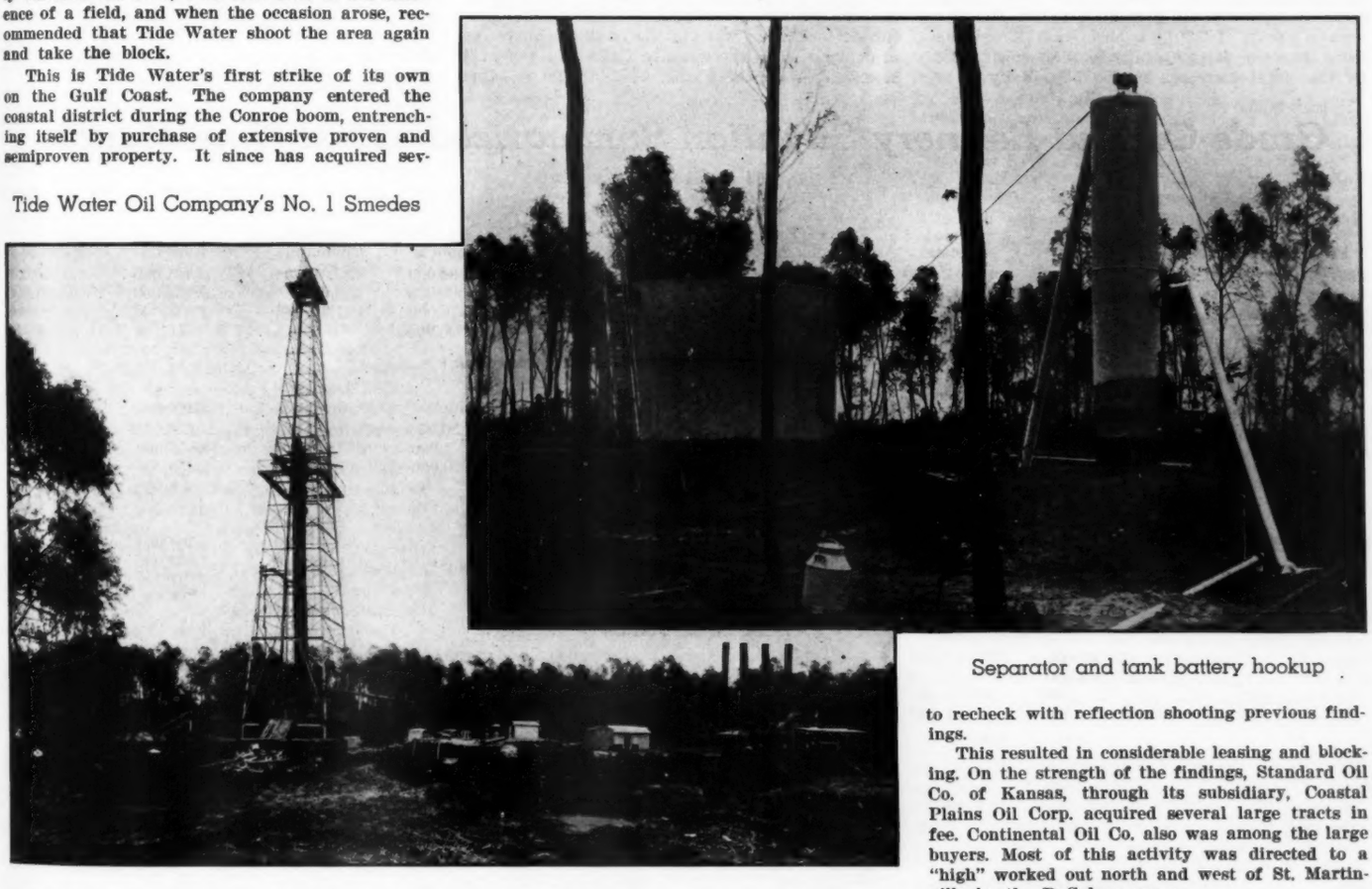
On the strength of one well, with a conspicuously high gas-oil ratio, little can be stated as to the potentialities or extent of the field. The well proves commercial production and a structural condition, which if it doesn't pay off in this horizon, may be productive in the lower Oligocene sands. It is expected the gas-oil ratio will be improved with later development and increased knowledge of production conditions.

Location has been made for a second test, on the same tract, 660 feet south and 660 feet west of the discovery. The discovery was drilled by Smith & McDannald, who used one of their large double drawworks rigs which had been in service at Bosco, expecting to go as low as 9,000 feet. Because of the comparatively shallow depth, the extra drawworks and engines will not be used in the second test.

Along about 1929, the Geophysical Research Corp. did some refraction shooting, picking up what was indicated to be a high just north of town. The picture on this corresponds roughly to that outlined by Independent Exploration Co.

Then followed another period of inactivity until late 1932 and early 1933, when geophysical crews of Geophysical Service, Inc., working for Geophysical Research Corp. and E. DeGolyer and associates, and also crews of Independent Exploration Co., working separately, went back into the area to recheck with reflection shooting previous findings.

This resulted in considerable leasing and blocking. On the strength of the findings, Standard Oil Co. of Kansas, through its subsidiary, Coastal Plains Oil Corp. acquired several large tracts in fee. Continental Oil Co. also was among the large buyers. Most of this activity was directed to a "high" worked out north and west of St. Martinville by the DeGolyer group.



Tide Water Oil Company's No. 1 Smedes

Separator and tank battery hookup

Eastern Crude Advances 15 Cents

The South Penn Oil Co., Tide Water Pipe Co. and other crude oil purchasers in the Pennsylvania Grade fields increased prices 15 cents effective on Wednesday, November 20. This makes Bradford and Allegany crude $2.30 per barrel; Pennsylvania Grade oil in National Transit lines $2.30; in Southwest Penn lines $2.02; in Eureka Pipe Line lines $1.97, and in Buckeye Pipe Line lines $1.82.

The Petroleum Electric Power Club will hold its seventh annual conference in the Adolphus Hotel, Dallas, Tex., December 4-6.

Inventories of Refinable Crude Down to Lowest Total for Several Years

Average crude oil production of 2,803,600 bbl.s in United States during September was the highest in over two years and refinery operations were maintained in line with the available production from the fields. So large were the domestic and export outlets for crude oil during the month, according to the latest available report of the Bureau of Mines, that nearly 5,000,000 bbls. were taken from storage, reducing the inventories of refinable crude to 320,705,000 bbls., the lowest in several years. Stocks of gasoline and most of the other refinery products were reduced slightly during the month so that on September 30, total stocks of all oils were 5,500,000 bbls. less than at the close of the previous month.

A study of the September data of the government shows the important position of California in the present crude oil and refinery situation and the desirability of a return to more normal operating conditions in the immediate future. The September output of 2,804,000 bbls. was 279,000 bbls. more than the daily average for September, 1934. Of this total increase, 172,300 bbls. daily is accounted for by the increased production of the West Coast state where the output started climbing rapidly in August accompanied by a drastic reduction in crude price schedules at the wells. This price schedule continued through September and October, but has since been changed so that present quotations reflect a partial recovery from the August lows. In the refinery end crude runs to stills at California refineries in September were 95,400 bbls. daily greater than in September, 1934, with an increase of 283,000 bbls. daily for the entire country.

A comparison based on percentages would show that while California crude oil production in September increased 37 per cent over September, 1934, the gain in the rest of the country was a little over 5 per cent. Crude runs to stills in California for the months under comparison increased 23 per cent, while in the remainder of the country the expansion was less than 9 per cent. The gains outside California were in line with the increases in demand while the gains in California were far in excess. With the season of minimum gasoline consumption approaching it is apparent that some reduction in total supplies will be necessary both in the crude oil and refinery divisions. A reduction in California operations to the point where their increases would be in line with the gains in the remainder of the country, would accomplish this objective.

The accumulative totals given in the accompanying table covering the first nine months of 1935 and 1934 reflect the fact that the demand for crude oil and most of the refinery products continued to exceed expectations. The gain in domestic gasoline demand over September, 1934, was less than in August and July but exports increased over the previous month and were 60 per cent more than September, 1934. For the nine months the total demand (domestic demand plus exports) was 6.3 per cent over the same period in 1934. Exports of kerosene which have been running behind last year increased substantially in September over August and this, coupled with an improved domestic movement, brought a small reduction in refinery inventories.

Crude Oil and Refinery Situation Summarized—First Nine Months

Supply and Demand—Crude Oil (Bbls.)

First nine months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Indicated domestic demand‡	Exports	Stocks refinable crude Sept. 30
1935	754,779,000	771,159,000	16,380,000	2.1	730,595,000	24,184,000	732,978,000	38,181,000	320,705,000
1934	710,836,000	715,734,000	4,898,000	.7	684,276,000	26,560,000	685,001,000	30,733,000	349,407,000
Increase, 1935	43,943,000	55,425,000	.....	....	46,319,000	†2,376,000	47,977,000	7,448,000	†28,702,000
Increase, 1935	6.2%	7.7%	.....	....	6.7%	†8.9%	7.0%	24.2%	†8.2%

Supply and Demand—Refinery Products—Motor Fuels (Bbls.)

First nine months—	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Domestic demand	Exports	Stocks Sept. 30§
1935	342,101,000	343,091,000	990,000	.3	342,081,000	20,000	321,465,000	21,626,000	50,757,000
1934	315,519,000	322,729,000	7,210,000	2.2	315,518,000	1,000	303,853,000	18,876,000	52,725,000
Increase, 1935	26,582,000	20,362,000	.....	....	26,563,000	19,000	17,612,000	2,750,000	†1,968,000
Increase, 1935	8.4%	6.3%	.....	....	8.4%	.....	5.8%	14.5%	†3.7%
Kerosene									
1935	41,333,000	38,493,000	*2,840,000	*7.3	41,333,000	.....	33,327,000	5,166,000	9,238,000
1934	39,403,000	38,422,000	*981,000	*2.5	39,403,000	.....	31,065,000	7,357,000	7,539,000
Increase, 1935	1,930,000	71,000	.....	....	1,930,000	.....	2,262,000	†2,191,000	1,699,000
Increase, 1935	4.9%	.2%	.....	....	4.9%	.....	7.3%	†29.8%	22.5%
Gas Oil and Fuel Oil									
1935	263,067,000	272,744,000	9,677,000	3.6	247,218,000	15,849,000	252,758,000	19,986,000	110,141,000
1934	253,784,000	262,137,000	8,353,000	3.3	244,220,000	9,564,000	241,123,000	21,014,000	120,553,000
Increase, 1935	9,283,000	10,607,000	.....	....	2,998,000	6,285,000	11,635,000	†1,028,000	†10,412,000
Increase, 1935	3.6%	4.0%	.....	....	1.2%	65.6%	4.8%	†4.8%	†9.4%
Lubricating Oil									
1935	20,371,000	21,095,000	724,000	2.5	20,371,000	.....	14,769,000	6,326,000	6,607,000
1934	19,794,000	19,929,000	135,000	.7	19,792,000	2,000	13,926,000	6,003,000	6,965,000
Increase, 1935	577,000	1,166,000	.....	....	579,000	.....	843,000	323,000	†358,000
Increase, 1935	2.9%	5.8%	.....	....	2.9%	.....	6.0%	5.3%	†5.1%
Petroleum Wax (Lbs.)									
1935	346,293,000	350,869,000	4,576,000	1.3	329,000,000	17,293,000	189,955,000	160,914,000	131,500,000
1934	383,162,000	333,288,000	*49,874,000	*15.0	352,240,000	30,922,000	185,263,000	148,025,000	118,991,000
Increase, 1935	†36,869,000	17,581,000	.....	....	†23,240,000	†13,629,000	4,692,000	12,889,000	12,469,000
Increase, 1935	†10.6%	5.2%	.....	....	†6.6%	†44.0%	2.5%	8.7%	10.4%

*Excess supply. †Decrease. *Note*—Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments. ‡Crude oil only. §Includes finished, unfinished refinery gasoline and natural gasoline.

Crude Oil Runs to Stills and Total All Oils (Bbls.)

First nine months—	Total imports§	Total exports§	Total crude to stills	Nat. gasoline production	%Gasoline yield from crude oil‡	Total supply all oils*	Total demand all oils*	Stocks all oils Sept. 30
1935	40,331,000	93,377,000	712,939,000	28,032,000	46.9%	800,291,000	810,852,000	553,587,000
1934	37,433,000	85,872,000	669,268,000	26,786,000	46.3%	749,831,000	764,120,000	587,909,000
Increase, 1935	2,898,000	7,505,000	43,671,000	1,246,000	.....	50,460,000	46,732,000	†34,322,000
Increase, 1935	7.7%	8.7%	6.5%	4.6%	.....	6.7%	6.1%	†5.8%

*Total all oils includes crude refined products, natural gasoline and benzol. †Decrease. ‡Includes natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of gas oil and fuel oil and wax, imports include only products for domestic use. All data based on Bureau of Mines reports.

Industry Can Settle California Issue; Little Hope of Legislative Action

By A. L. WEIL
President, General Petroleum Corp.*

During 1934, when east of the Rocky Mountains was struggling with a tremendously demoralized market, the market in California had been stabilized to a degree and a retail price of gasoline maintained which made it possible to bring in gasoline produced from "hot" oil in Texas, all the way from the Gulf, on tankers, pay the canal tolls, undersell gasoline in California, and yield a small profit to the purchaser. Whereas, as soon as you gentlemen, or some of you, through your intelligent and herculean efforts, in the Mid-Continent, on the Atlantic Coast, succeeded in stabilizing production, in stabilizing the market for gasoline, California burst out in a perfect orgy of overproduction and a perfect orgy of price-cutting which, in many instances, resulted in the sale of gasoline at less than the cost of production.

Deuces Looked Like Aces

I think this last episode of ours caused a great deal of unrest on the Atlantic Coast. But the days for the approaching hurricane came and went, and there were no blasts of air and there were no floods of water, and everything remained about the same as it was before. The trouble with all this, and the reason for it was, that the producers in California overplayed their hands a little bit in this last outburst. They had succeeded in convincing the other producers in California and, I think, succeeded in convincing each other and, in any event, had, to some degree, succeeded in convincing the area east of the Rocky Mountains that the potential production of this state was something between 1,100,000 and 1,500,000 bbls. a day. And these producers sat down in the game, and they only had a pair of deuces in their hand. But none of the other players knew it. As a matter of fact, I think they were somewhat myopic, and the deuces looked like aces, because, without having their hands called, they threw the hand down on the table, and it at once appeared that all it was, was a pair of deuces.

To take for an illustration, the famous Signal Hill field, with the reputed potential of 125,000 bbls. a day, has been running wide open for weeks, and the maximum production it has been able to make is somewhere around 76,000 or 77,000 bbls. a day. The other Los Angeles Basin fields of Playa del Rey, Santa Fe Springs, Huntington Beach, will show somewhat similar results, although not quite to such an extreme degree.

In 1925, the total production of California was 635,000 bbls. a day. The total production for 1935 was approximately 635,000 bbls. a day, although in the last week or two the production has mounted quite considerably. I believe the production last week was 683,000 bbls. a day. However, the production in 1935 was substantially equal to the production in 1925.

In the meantime, we have reduced our storage 37,000,000 bbls. The consumption of gasoline here has gone from 1,100,000,000 gallons in 1925 to 2,100,000,000 gallons in 1935. We have increased our offshore shipments from 71,000 bbls. a day in 1925 to 114,000 bbls. a day in 1935. But, the interesting feature of the whole thing is that during the same period the sales of California production to the Atlantic Coast decreased from 78,000 bbls. a day to 48,000 bbls. a day. In other words, the production is substantially the same, the storage is extraordinarily lower, and our local consumption has almost doubled. I doubt very much if there is any serious menace in the California oil situation to the Atlantic Coast, which will interest the producers and refiners there, and the producers and refiners in the Mid-Continent and Gulf Coast who look to the Atlantic Coast for a market.

*Before A.P.I., Los Angeles, Calif.

In the Los Angeles Basin fields, taking Signal Hill again, as a typical example, the ownerships are very small. I believe one piece of property in the Santa Fe Springs field, for example, is about 60 feet wide and about 200 feet long, and contains five producing wells. Any one of you who have been in the Santa Fe Springs field are very familiar there with Hell's Half Acre. The men who operate these fields are, to a considerable extent, not oil men at all. They are men attracted to the oil industry by the promises of a quick and easy profit at their very doors. They have gone into these markets; they have no interest in the future of the oil industry; they have no interest in stabilization; they have no interest in conservation. All they want is to get the greatest amount of money in the shortest possible time.

A. L. WEIL

These fields are almost within the confines of the city of Los Angeles, the largest consuming area west of the Rockies. Crude oil and refined products can be trucked over the good roads and no grades at a minimum of expense. Here you would expect that you have an ideal situation to demoralize and upset a market.

Kettleman Contrast

As these conditions now exist, the Los Angeles Basin fields that are in the worst possible situation from an oil man's point of view, are not disturbing the market at all. On the other hand, we have fields in the San Joaquin Valley that are just the opposite in their physical and ownership characteristics to those in the Los Angeles Basin. I am speaking particularly of the Kettleman North dome. The property up there is all owned in large parcels. The wells are all being drilled on a 20-acre spacing agreement. The properties are all owned and controlled by strong people, by men whose future is bound up with the future prosperity of the oil business, by men who know what the unreasonable waste of reservoir energy by blowing gas into the air will do to the oil field, and by men who know the damage that will be done by the infiltration of water when no back pressure is put upon the well.

Here obviously is a field which should be a leader in the conservation movement, in stabilizing the oil industry. It is the bad example of overproduction, set in this field, circumstanced as it is and held in strong and powerful ownership, that is preventing a proper degree of stabilization and orderliness in the oil industry in California today.

Five Men Could Control

And the unfortunate part of the whole business is that the whole situation could be controlled by not more than five men. In most of these other fields where you have trouble, the Los Angeles Basin fields on the one hand or your fields in East Texas on the other, you have hundreds and hundreds of operators to deal with. One man has one idea and another has another, and even when they have honest intentions and are trying to accomplish a result, there is such a diversity of opinion as to how the results shall be accomplished that it is almost impossible to obtain unity of action.

If five men, at most, who are interested in the Kettleman fields, would sit down together and forget their personal animosities and their megalomania, their desire to be big shots in the oil industry, this whole situation could be cleared up in a single noon-day session.

It therefore appears to me that this is a situation which should not endure for a very long time. I cannot believe that experienced oil men, men who know what they are about, whose interest is ultimately tied up with the oil industry, should sit there for any considerable length of time and gut one of the greatest oil fields in the world today.

Little Legislative Hope

In reference to legislation, I feel that California cannot hold out much promise at the moment. I think most of the oil men in California are strongly behind the interstate compact, and will use every effort within their power to bring about the accession of California to this compact. We have a bad legislative history in California. It is true we have two pretty good statutes here. We have one statute which prohibits the drilling of wells within 150 feet of the boundary of a property, which will probably prevent conditions that would permit a new town lot development which would be disastrous to the industry. We have another statute that prohibits the blowing of gas into the air, and if this statute is intelligently and vigorously enforced by the state, it will do very much to bring about curtailment in itself. But as far as controlling production is concerned, in the sense of having some commission fix the market demand for crude oil and then allocate that demand among the fields and properties of the state, I feel that is temporarily a hopeless situation.

Most of the men in the oil industry who opposed the Sharkey Bill, I think now look back with some regret at their action. They feel we would all be much better off if we had some sort of a regulatory measure, even though it were not a perfect one. But there is a group in California here who have just about enough oil to say they are in the oil industry, who for some reason of their own have decided that no such regulatory measures shall pass, or any similar regulatory measure. And the members of the legislature have been so terrorized by this popular uprising that struck down the Sharkey Bill, I am very doubtful if within the next few years it will be possible to get any sort of legislation through, no matter how convincing the arguments may be that it is to the best interests of the state.

We have gone through a stormy period, but I hope the sun will soon break out from behind the clouds and shine upon us, so we may pay a fair price to the producer of oil and at the same time insure a legitimate profit to the refiner and to the marketer.

Pipe Line Progress

Continental Asks for Bids on 85-Mile Pipe Line to Jesse Area

The Continental Oil Co. has asked for bids on an 8-inch welded pipe line to be constructed of new pipe, from Oklahoma City to the Jesse area in Township 1-7 in southern Pontotoc County, Oklahoma, a distance of 85 miles.

The route of the line is not yet determined but a preliminary route survey is being made.

As the main line would pass very near, if not through, the Fitts pool, it would add an outlet for the production of that big field.

The Continental Oil Co. recently opened a pool with a test in section 12-1-7, about 4 miles southeast of the Fitts pool, and while the well is not yet a completion and its potentiality is not yet definitely known, it is believed to have opened an important Bromide and McLish sand pool in which the Continental Oil Co. has the bulk of the acreage.

The line, if laid, will connect with the Continental Oil Co.'s pipe line from the Oklahoma City field to Ponca City, where its refinery is located.

It is the largest pipe line project Oklahoma has had in many months.

Michigan Gas Lines

MUSKEGON, Mich., Nov. 18.—After a six-year wait, a market for the natural gas reserves of the Clare County field, first dry gas producing area in Michigan, was established last week by completion of a 7-mile pipe line.

The line was laid at a cost of about $20,000 by James A. McKay, pioneer developer of the Clare field which includes eight wells drilled over a period of three years for an aggregate open flow capacity of 40,000,000 feet and reserves estimated at about 3,000,000,000 feet.

The new line connects the field with the Gas Corp. of Michigan's system serving Clare, Rosebush, Mt. Pleasant and other central Michigan communities. The field includes part of Surrey, Hatton, Lincoln and Grant Townships, Clare County.

The Gas Corp. of Michigan has filed an application with the Michigan Public Utilities Commission for a permit to purchase natural gas in Winfield Township, Montcalm County, and lay a line to serve the city of Greenville.

Hearing has been set for November 19. The company already holds a franchise for distributing manufactured gas in Greenville. Although no producing wells have been completed in Winfield Township, one test which was drilled deeper to failure in oil sands passed through a flow of about 8,000,000 feet a day in the Michigan stray sands. A new test has just been started.

New Indianapolis System

Indianapolis, Ind., has engaged W. E. Steinwedell, 2410 Derbyshire Road, Cleveland, engineer, to make surveys for steel pipe lines for natural gas distribution and estimates of cost for converting existing system of Indianapolis Gas Co., to be secured under lease, for natural gas service, heretofore used for artificial gas supply.

Portwood Oil Line

Petroleum Producers Co., Wichita Falls, Tex., is considering a welded steel pipe line for crude oil transmission in connection with development of oil properties in Portwood district, Baylor County, Texas. Cost over $75,000.

Port Lavaca Gas Line

Houston Natural Gas System, Inc., Houston, Tex., plans welded steel pipe line from natural gas fields near Port Lavaca, Tex., to that place and vicinity for commercial gas supply. Line will lead from properties of Halliburton Oil Producing Co., Inc., with which contract has been made for bulk supply. Steel pipe distribution system will be installed at Port Lavaca, where franchise has been secured in name of Texas Natural Gas Utilities, Inc., a subsidiary, which will operate the local system.

New Burrton Gas Outlet

Cities Service Gas Co. will give the Burrton field of Reno County, Kansas, an additional market as it has completed plans for laying a 12-inch gas line from Burrton to its pumping station and natural gasoline plant, south of Wichita on the Seneca street road.

Taking Up Palo Pinto Line

The Sinclair Prairie Pipe Line Co. is busy taking up 12 miles of 12-inch line between Rogers station and the Brazos River in Palo Pinto County, Texas. This line is part of a three-line system composed of two 8-inch lines and this 12-inch line. One of the eights was taken up some time ago, and only one 8-inch line will be left, sufficient to handle the small production in this area.

OBITUARY

JESSE FINSTON, 52, an oil operator in Tulsa for 20 years and secretary-treasurer of the Bell Oil & Gas Co., died last week of heart disease. He was born in Cincinnati, Ohio, and came to Tulsa in 1916. For a period he was in charge of the Mid-Co Refining Co., then organized the Altitude Petroleum Co., dissolved five years ago when he entered the Bell company, organized by his brothers, Albert and Mark Finston. Mark Finston died three years ago.

HUGH LEONARD O'ROURKE, for some years associated with Cartier Oils, Ltd., of Calgary, Alberta, died at that city recently.

HENRY S. HAMPSON, 42, for 15 years associated with the sales organization of Electro Metallurgical Sales Corp., died suddenly November 13 in his home in New Rochelle, N. Y.

W. P. H. McFADDIN, SR., 79, who owned the land where the famous Spindletop oil field is located, died at his home in Beaumont, Tex., after an illness of three weeks.

W. H. FREE, Wooster, Ohio, pioneer rig-builder in Ohio and later employed in the Michigan fields, died recently.

A.I.M.E. Meeting

Mid-Continent Section, A.I.M.E. will hold its monthly meeting in the Tulsa Building, Tulsa, 8:15 p.m., November 25, devoted to application of reservoir data in estimating oil and gas reserves. Don Katz, Phillips Petroleum Co. research department, will lead the discussion. A paper by R. J. Schulthuis, Humble Oil & Refining Co., on "Active Oil and Reservoir Energy" will also be read.

Dr. Alvin W. Schoenleber, assistant chief medical officer of Standard Oil Co. of New Jersey, is on a visit to Rumania.

Natural Gasoline

Large Shipment of Propane Exported to England

As an indication of the ever-growing world market for liquefied petroleum gases, the Philgas department of the Phillips Petroleum Co. recently exported to England a large shipment of natural gas propane. Fifty tons of this product left Hoboken, N. J., aboard the Steamship Trentino, bound for London, the shipment being handled as deck cargo in "M," "N" and about four hundred 100-pound cylinders, which had been collected and filled at the Haskell, N. J., station and transferred via truck to Hoboken.

Fifty tons of propane were shipped in this manner to the Herbert Green refinery near London, England

Upon arrival in England the propane was delivered via railroad to its ultimate destination at a new lubricating oil refinery being constructed near Hull by Herbert Green & Co., Ltd., of London. Here the propane will be used as a dewaxing agent and solvent in the manufacture of lubricants by the Duo-Sol process.

Propane from natural gas sources is most desirable for certain solvent applications in the manufacture of lubricating oils, and the product required by the England company necessitated shipment from Phillips natural gas propane shipping points. Special handling of this export shipment by the Haskell station involved considerable manipulation of large M and N cylinders, as well as a large number of the 100-pound size. The correlation of this work and the arrangement for export papers were handled by the Philgas, New York and Detroit offices.

Increase Sinclair Plant

The Sinclair Prairie Oil Co. has added four 170-horsepower compressors to its Greggton natural gasoline plant in the East Texas field to bring the total number to 22. At the same time a battery of tanks and a tail-gas vapor recovery unit were added to make the plant one of the largest and most complete units in the field.

At the present time the equipment is capable of processing up to 18,000,000 feet of gas daily and provisions have been made for the convenient expansion of the plant when and if the move is considered advisable as field conditions change.

Company Invited to Submit Bid

The Alma, Mich., city commission last week invited Midwest Oil Refineries Co. of that city to submit a proposal to serve the city with natural gas. The refinery company recently completed a gas pipe line from the Crystal field to its plant for its own fuel. Alma at present is furnished with artificial gas by the Consumers Power Co. Several pipe line concerns have sought a franchise for natural gas during the past year or two.

Refinery Projects

Dickey Will Close McPherson Plant While Modernizing

Dickey Oil & Refining Co. of Wichita has announced that its McPherson plant would be closed down for about two weeks to make improvements for more efficient operation. Webster Engineering Co., Tulsa, has the contract to make the repairs and install the new equipment, the regular refinery crew doing the work.

Sufficient gasoline and petroleum products are in stock to care for the company's business while plant operations are curtailed.

Crystal Refining Completing Central Michigan Plant

MUSKEGON, Mich., Nov. 8.—Crystal Refining Co. is completing a refinery of 2,500 bbls. daily capacity at Carson City, Mich., in the central Michigan oil region, the plant being expected to begin making shipments in two weeks. The company is headed by Del Fortney, who has developed a substantial volume of production in Michigan. Oils, Inc., Chicago, has negotiated a contract for sales of the company's products.

Another plant of similar size under construction in that area is that of Borin Brothers at Alma. Other plants planned are Swanson Oil Co. at Battle Creek and Inland Refining Co. at Pontiac.

Construction to Start on New Port Lavaca Refinery

The Wood-Moore Corp. has ordered construction to start immediately on a 2,000-bbl. refinery to be located at Port Lavaca along the Gulf Coast in Texas. The refinery will process but 1,250 bbls. of local crude daily when it is placed in operation, but the design of the plant provides for the addition of secondary fractionating equipment which will allow the plant to run the full 2,000 bbls. within a very short time after the increased capacity is needed. Special attention is being given the design for the purpose of permitting the manufacture of closely fractionated naphthas and solvents since the local 42 gravity oil favors the manufacture of these products.

The Vulcan Steel Tank Corp. has been given the contract for the engineering work and materials, the supervision of the work being in the hands of R. B. Millard. Tentative plans call for the completing of the job by September 1, 1936.

Globe Refinery Sets Record

The McPherson plant of the Globe Oil & Refining Co. recently set a new record for the Mid-Continent field with 153 consecutive days of operation of its cracking units without a shut down, the company's officials announced. If the same pace is continued until Christmas, as now appears probable, officials said a national mark will be established. The previous Mid-Continent record was said to have been set by the same plant earlier in the year.

Kilgore Refinery Leased

The Johnson & Burnham refinery in Kilgore, Tex., is now leased and being operated by the Dominant Refining Co. The plant is of 4,000-bbl. capacity and at the present time is processing approximately 2,000 bbls. of East Texas crude daily.

Natural Gas

Stalcup Attributes Gas Waste in Panhandle to Litigation

AUSTIN, Tex., Nov. 19.—H. M. Stalcup, of Tulsa, vice president of Skelly Oil Co., in a hearing before the Railroad Commission, attributed waste of 1,000,000,000 feet of gas daily in the Panhandle field to court action enjoining enforcement of the commission's order based on the new gas conservation act.

To emphasize the quantity of gas wasted, Mr. Stalcup said it was the equivalent of the total national industrial and domestic demand, adding that "it is gutting and ruining the greatest oil field, in acreage, in the world." Virgin pressure in the field was 430 pounds, he said, "which makes three times as important the conservation of gas."

"Good oil producing leases have been ruined by dissipation of the gas reserve," he said.

Flow of Gas Through Lines

A joint report by T. W. Johnson and W. B. Berwald of the Bartlesville, Okla., station of the U. S. Bureau of Mines on "Flow of Natural Gas Through High Pressure Transmission Lines," has recently been printed as Monograph 6 by the Department of the Interior with the American Gas Association bearing the cost of printing. This is the joint work of the state of Oklahoma and the Natural Gas Department of the American Gas Association. Copies may be secured through the American Gas Association, 420 Lexington Avenue, New York, or the Bureau of Mines, Washington, D. C.

Canadian Gas Production

OTTAWA, Ontario, Nov. 16.—Natural gas production from Canadian wells in September amounted to 1,070,777,000 feet compared with 928,263,000 feet in August and 1,244,683,000 feet in September, 1934. For the nine months of 1935 the total was 15,597,345,000 feet as against 17,033,804,000 feet in the like period last year.

Imports of mixed (natural and artificial) gas in September rose to 14,370,000 feet, worth $9,205, compared with 11,626,000 feet at $7,495 in August.

Canadian Gas Lines

Prairie Gas Utilities, Ltd., Regina, Saskatchewan, Canada, plans natural gas welded steel pipe lines in different communities in province. Cost over $1,000,000. Herbert R. Davis, Liberty Bank Building, Buffalo, N. Y., is consulting engineer.

Texas Nominations Up

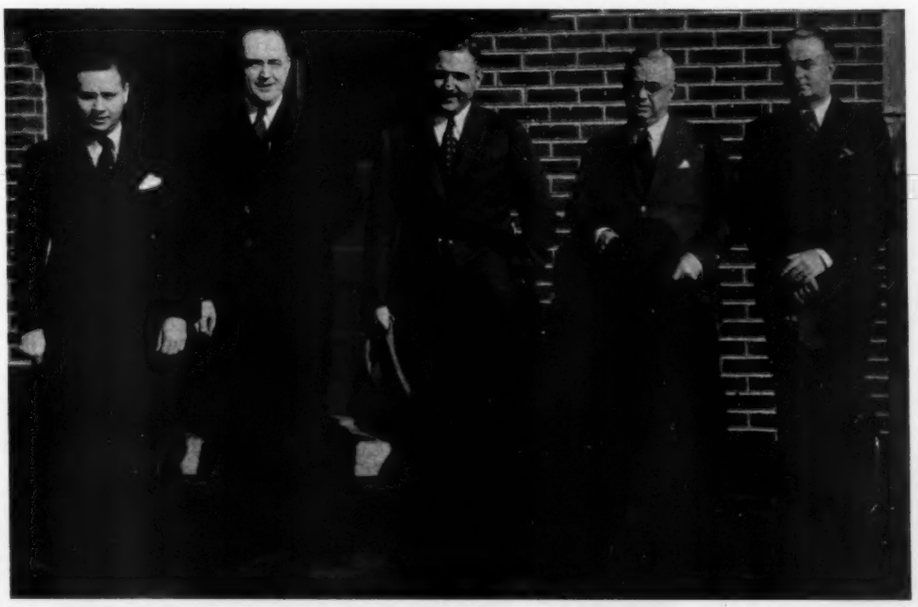
AUSTIN, Tex., Nov. 19.—Nominations for crude in Texas filed by purchasers, applied for 1,088,574 bbls. daily in December, compared with allowed production in November of 1,069,000 bbls. December nominations were: Gulf Coast, 190,537 bbls.; Conroe, 54,750 bbls.; West Texas, 144,459 bbls.; West Central Texas, 24,177 bbls.; East Central Texas, 29,585 bbls.; North Texas, 60,475 bbls.; Panhandle, 57,180 bbls.; Southwest Texas, 60,412 bbls., and East Texas 458,002 bbls.

Centrahoma Test on Top of Bromide at 6,225 Feet

The most closely watched test in Oklahoma, Carter Oil Co.'s No. 1 Thompson in section 34-2-9, in the Centrahoma district in Coal County, topped Bromide lime at 6,225 feet. Before drilling deeper the operators will bail the hole and make a test of the showing in the Viola.

Sunray Oil Co., Rinehart and Hyer's No. 1 Cully, NW SW NE section 13-12-8, a wildcat in Okfuskee County, Oklahoma, flowed 30 bbls. in 35 minutes through three-quarters inch choke, with 2,500,000 feet of gas per day, from Hunton lime at 3,996-4,005 feet, total depth. It opens a pool near the town of Boley. It had been drilled to 4,194 feet but both Wilcox sands showed water and it was plugged back to 4,005 feet. Hyer has a quarter interest in the 25-acre lease, the two other owners owning three-eighths each, but Sunray and Rinehart own 500 acres around the well. The new well is estimated to be good for 600 bbls. a day.

In Kiowa County W. C. Adams and others' No. 1 Stone, C SE NE section 34-7-17w, after being drilled to 1,541 feet, was plugged back and acidized at 905-40 feet and the hole later filled nearly to the top with oil. Bailing failed to lower the oil below 300 feet off bottom. No water showed. This is a wildcat test.



Shown in the photograph, from left to right, are A. L. Gustin, Jr., and J. F. Stevens, of Gustin-Bacon Manufacturing Co. of Kansas City, Mo.; R. S. Wilson, vice president, director and general sales manager of Goodyear Tire & Rubber Co., Akron, Ohio; A. L. Gustin, Sr., Gustin-Bacon Manufacturing Co., Kansas City, Mo.; and W. C. Winings, manager of mechanical rubber goods department for Goodyear Tire & Rubber Co., Akron, Ohio. This party is on a tour of the Mid-Continent and Gulf Coast fields, and spent the first part of the week in Tulsa and from there proceeded to Dallas and Houston.

Far Reaching Benefits to Oil Industry to Flow From Meeting of Institute

By ANDREW M. ROWLEY

LOS ANGELES, Calif., Nov. 16.—Far reaching benefits of the 1935 annual meeting of the American Petroleum Institute held at the Biltmore Hotel here this week will be experienced by the oil business without many realizing the annual get-together is largely responsible for the better feeling. Ordinarily the head line news of this convention comes in the form of resolutions adopted by the board of directors. This year, however, deliberations of the board seemed to be singularly free of controversial subjects and the resolutions adopted were not calculated to make any editor dig up his scare head type.

But the executives, technical men and others in attendance this year apparently got more real benefit from the meeting than from many previous sessions. Personal conferences, the exchange of views, and the trading of experiences, resulted in clearing up in the minds of many oil men of matters relating to the production, refining and marketing branches of the industry. Many uncertainties were removed and a far better understanding of each other's position obtained as a result of the conversations and conferences held during the week.

The meeting just closed was the largest in point of official registration ever held, 3,137 signing the cards, an increase of 12 over the previous record of 3,125 established last year at Dallas. And the committee meetings, group sessions of the various divisions and the two general sessions drew larger attendances than previous meetings. The production division held its meetings in the large ballroom where the general sessions were held and at each meeting the big room was crowded. Similar interest was manifest in the group meetings of the refining and marketing divisions. Overflow attendance was the prevailing condition especially when polymerization was discussed.

The selection of Chicago as the place to hold the annual meeting, November 9 to 12 inclusive next year, and of Tulsa for the mid-year meeting in May met with universal approval. There is a steadily growing sentiment to hold the annual meeting each year in Chicago and to have the mid-year meeting alternate between Tulsa and some city in Texas. The date of the meeting in Tulsa will be decided in a few days. It probably will be a few days prior to the opening of the International Petroleum Exposition on May 16.

Sentiment of the petroleum industry further crystallized at this meeting against any form of federal control of the business or any branch of it. In the addresses at the general sessions and in informal discussions there seemed to be a unanimity of opinion against permitting federal bureaucracies to take charge of or to direct the oil business or to interfere in any way with self-government of their own business by the men who have built it up and who are solely responsible for all the improvements in methods, practices and products.

At the same time more favorable consideration is being given to the interstate compact. A number of the speakers referred in a highly complimentary way to the Interstate Compact Commission and to the opportunities of this organization to solve in a constitutional and cooperative manner the problems of production, proration, state regulation and enforcement of conservation measures. Oil men from states which have not as yet adopted legislation ratifying the compact discussed this treaty with representatives and members of the Interstate Compact Commission present at the meeting and seemed favorably impressed with what is being done and plans for future operations of the commission.

While the petroleum industry is united in its stand against federal control of the business, a warning was sounded at the meeting that the oil business must be prepared to combat vigorously numerous measures to be introduced in the next session of congress which, if enacted into law, would mean the end of the petroleum industry as a private business. Some of these measures either provide for federal licensing systems, thus ignoring state lines and powers, or for the establishment of supervising federal boards.

The ever-growing burden of excessive taxation naturally assumed a prominent part in discussions at the meeting. Gen. Baird H. Markham, director of the American Petroleum Industries Committee, one of the most active departments of the Institute, was one of the busiest men at the meeting. He favors organizing alert and militant groups of tax-conscious oil men in each of the 3,081 counties in the United States as essential to the relief of the petroleum industry and its customers from excessive and unjust taxation.

The code of fair marketing practices was discussed at the meeting by Charles E. Arnott, vice president of the Socony-Vacuum Co., who has devoted considerable time to contacting the refining and marketing branches of the industry in the interest of the proposed code. No action on the proposed code was taken at the meeting this week by the Institute membership or its board of directors.

The board of directors, by resolution, requested the president of the United States and the Secretary of the Treasury to amend the order of the Procurement Division of the Treasury Department so as to require the purchase of asphalt made from domestic crude oil for use in the public works of this country.

Committees of the Institute made gratifying progress at the meeting in the consideration of the many subjects being handled. The program of the Production Division at the May meeting in Tulsa will be based largely on results and discussions and work at the meeting here this week. The committee on drilling and production practice of which Fred Wood of the Standard Oil Co. (Indiana) is chairman discussed many subjects relating to drilling and production practice and has about completed for publication a tentative code on standard procedure for determining the permeability of porous media.

Pronounced advancement was made at this meeting towards a complete standardization of valves and fittings for pipe-line use. J. J. Boyd of the Stanolind Pipe Line Co. is chairman of the committee considering this subject and this committee is cooperating closely with the refinery division on this problem.

A new standard on 1-inch sucker rods will be formulated by the committee on pumping equipment. There has not been any such standard and individual manufacturers of sucker rods, instead of going ahead and making such rods without any standards set by the Institute, first came to the Institute and asked that all get together and agree on a standard. This has been done.

Various associations and organizations are cooperating with the Institute committees in their work. The Steel Derrick Manufacturers Association had representatives at the meeting this week and the engineering committee of this association is cooperating in the design and development of the new equipment and towards the development of safer and more efficient standards. Deck Wilmoth is executive secretary of the organization, which maintains headquarters in Tulsa.

K. R. Kingsbury (right), presenting gavel to President Axtell J. Byles of the American Petroleum Institute (center), while W. R. Boyd, Jr., executive vice president (left) looks on

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the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by

THE PETROLEUM PUBLISHING COMPANY

114-16 West Second Street, Tulsa, Oklahoma

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Speaking Out

The American Petroleum Institute is to be congratulated upon the positive position taken on public issues at the Los Angeles meeting.

The increasing intrusion of government into business is forcing business men to an active criticism of public policies which they have heretofore shunned as trenching on "politics." But the issues affecting business are economic and not political as "politics" has been known. They affect trade and industrial transactions, methods and procedure upon which business men irrespective of politics have a right and duty to speak from personal experience.

This has been the position taken by President Byles and the Institute in definitely and forcefully opposing any plan for federal control of the oil industry and in demanding revision of the oppressive tax burdens, federal and state, imposed upon the oil business.

These two issues, federal control and oppressive taxation, are business matters, not politics. They are of prime importance to the industry which should consider them as strictly business and the Institute sets a good example in so outspokenly considering them, as President Byles did at Los Angeles.

Stimulating Outlook

Motorists in California who think they can perpetuate low prices for gasoline by opposing regulation of oil production are living in a fool's paradise. The very superabundance of crude production which is cheapening gasoline today is exhausting the state's reserves of crude for making the gasoline that will be needed by Californians tomorrow.

With crude production over 680,000 barrels daily, the highest level in five years, it is almost on top of the 700,000 barrels daily limit which it is estimated cannot be maintained much more than 60 days.

No new pools of consequence are being discovered to maintain the reserves which are being drained by reckless dissipation of the reservoir energy. In several fields it is now known potential was set too high.

Far-sighted leaders of the industry in California are thinking about stocks for the future as a real problem which motorists should also be thinking about. If California has to get oil from outside the state to supply its gasoline, that will end the motorists' joy ride.

Regulation of production for the conservation of the state's oil will prolong California's supply for Californians. It will assure them motor fuel at a reasonable price and delay the day when bringing crude from outside will determine prices.

California's dilemma is a warning for the rest of the country. The American Petroleum Institute reports an estimate that we have today over 12,000,000,000 barrels of proven reserves. We produced 8,692,000,000 barrels in the last 10 years. We cannot draw on that reserve at that rate without replacing the withdrawals with new discoveries as time goes on.

Figures show that to maintain our reserves we need to discover approximately 500,000,000 barrels a year. We have not been doing it. A good average field will produce about 50,000,000 barrels ultimate production. So that to maintain our reserve we need to discover the equivalent of ten 50,000,000-barrel fields a year. How long has it been since we did that? What are the present prospects for doing it?

That is why regulation of production to prevent waste is necessary for the rest of the country as well as California. It is why the outlook for the industry is stimulating. It has work to do to maintain that reserve by orderly development, persistent research and unflagging enterprise in all departments.

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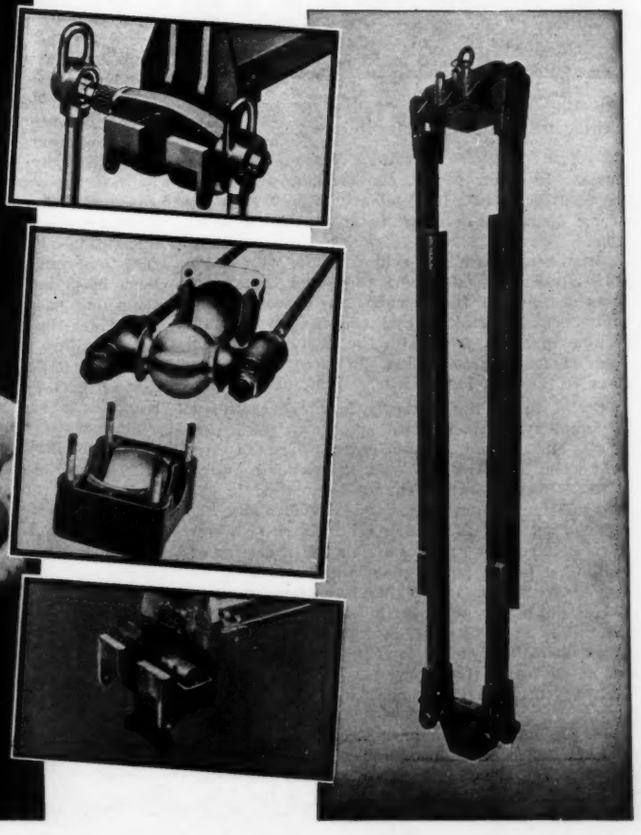


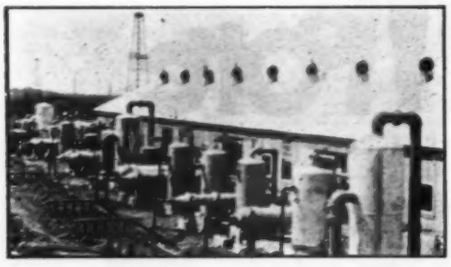
Compressors of Many Sizes and Types Used to Produce Oil With Gas Lift

By S. F. SHAW
Consulting Engineer, San Antonio, Tex.

Securing oil by gas-lift methods has long been practiced in the industry, but little has been published about the selection of equipment for the plants. Mr. Shaw in this article draws upon his wide experience in this and foreign countries and discusses the various plant designs used.

The proper use of compressors is an essential feature in producing oil by gas-lift methods. The experience acquired by production engineers at Tonkawa, Wewoka, Seminole, Oklahoma City, Okla., and other fields in gas-lift operations should point the way toward a better use of this important piece of machinery.

In past years, the compressor plant has been looked upon almost as a separate unit from that of gas-lift work. In most cases the design and construction of compressor plants for gas-lift work have been left to a good mechanic, or to a mechanical engineer who has had no experience of consequence in the application of compressed gas to the lifting of oil. The production engineer has been expected to take the gas from this plant and apply it in the manner which he considers most efficient for handling the well operation. But the matter is not thus easily disposed of. The compressor plant is an integral part of gas-lift operations, and if the plant does not perform its work properly for lifting oil, the cost of the operation becomes excessive. The production engineer must learn of the performances and limitations of compressors, the cost of construction and of operation, if he hopes to make a success in carrying gas-lift operations through to a successful conclusion. In other words, the mechanical side of the operation must be combined closely with the lifting operation in order to obtain the best results.



Exterior view of one of the many gas-lift plants used in the Seminole area, Oklahoma

Mistakes, as well as achievements, were made at Seminole and Oklahoma City, and in the various smaller oil fields where gas-lift operations have been undertaken, and the industry should be able to profit from both the mistakes and accomplishments by analyzing the operations undertaken in those various fields.

Owing to the limited space in which any form of pumping machinery must operate in the lifting of oil, and to the inaccessibility of such equipment when installed in a well, the power required in the lifting operation cannot be applied in the most efficient manner. This observation applies to any method used for lifting oil through openings of small diameter and results in the necessity of building a larger power plant than would otherwise be required. It is, therefore, important to design this power plant in the manner calling for the minimum outlay of capital consistent with proper operations, and with acceptable lifting costs, and at the same time serve the purpose satisfactorily for this particular method of lifting operation.

In the initial stage of a deep well that has come in for a large production, it usually happens natural flow is the first method employed for lifting the oil. In the early days of the Oklahoma City field, it was not unusual for a well to come in for 50,000 bbls. of oil per day, accompanied by 50,000,000 feet of gas, under a reservoir pressure of 2,600 pounds. The expansion of 50,000,000 feet of gas per day from 2,600 pounds to atmospheric pressure was equivalent to the development of nearly 13,000 horsepower. No such quantity of power was required for lifting the oil, in fact, at this initial stage the pressure condition alone was sufficient to lift the oil to the surface without the aid of any gas whatsoever, but the gas was largely dissolved in the oil, and the oil could not be removed from the pool without bringing out the gas with it. In the course of time, the pressure in the reservoir declined and the well ceased to flow, after which the lifting operations were carried on by means of gas-lift.

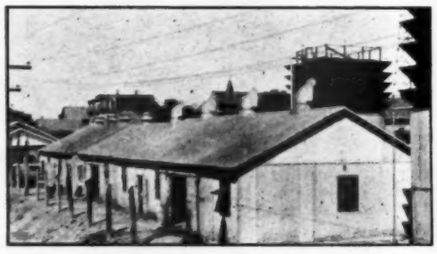
The generating of the power for gas-lift operations and its proper application affords a serious study for the production and mechanical engineer, in order that the outlay for the power plan may not be greater than is necessary, and the operating expense may be as low as is consistent with proper operations.

Compressors employed for gas-lift operations are driven by steam engines, electric motors, or by internal combustion engines which use oil or gas for fuel. Steam was employed in the early days for operating compressors for air-lift work, but this method was found to consume too much fuel to permit efficient operations.. Electric motors have been employed in small and large installations and possess the advantage that the capital outlay for the plant is low, and the time required for installing the plant is probably less than for any other type of plant. However, when the production declines to a low point, the cost of electric power becomes correspondingly higher. Oil engines can be employed, but their use has been limited, owing to the fact the cost of the engine is greater than that of a gas engine. Fuel gas is usually available at low cost at gas-lift compressor plants, thus making gas-engine drive the more convenient and less expensive to operate, and involving a lower installation cost. The trend in gas-lift work has been largely toward compressors direct-driven from gas engines.

Single unit compressor plant in the East Texas oil field, a typical scene

The choice of the size of the compressor units employed shows considerable variety in opinion. The tendency toward the large units, that is, 165 to 230 horsepower is pronounced in the manufacture of natural gasoline, and, looking at the operation strictly from a mechanical engineering point of view, it would seem as if the combination of gasoline plant and gas-lift plant would be a happy solution of the problem. The problem is not so simple, however, as this point of view would seem to indicate, and much disappointment has resulted from the combination gasoline-gas lift arrangement in the Mid-Continent, due largely to the comparatively short life of the deep wells being operated in many of these fields.

For strictly gas-lift operations, the use of small compressor units, as well as large units, has been advocated. It is true the cost per horsepower installed is less for a large unit than for a small unit, but in most cases there are other factors more than offsetting the small reduction in installation cost obtained by using large units. Flexibility in application of the unit, and portability of the machinery to another site, are major features in the use of compressors for gas-lift work. Nearly all wells quickly reach a peak in production, then begin to decline, and sometimes this decline is rapid, depending on the extent to which the productive capacity of the well is approached. After the well begins to decline, it is desirable to begin movement of part of the plant to another site, thus making portability an important factor in the choice of a unit.



Gas-lift compressor plant with ten 90-horsepower units in the Oklahoma City field

Gas-lift plants are large or small, depending on the number of wells to be flowed from a single plant; on the pressure required; on the life of the wells; and on whether the wells are to be produced at maximum capacity or on restricted production.

In designing a compressor plant, it is highly desirable to bear in mind the type of operation required in the later life of the well, during which time the well will have settled down to the longest span of its producing life. It is at such a time economies must be introduced, consequently the plant should be such as to adapt itself to effecting these economies.

Improvements in the use of the gas-lift are constantly being made, and the type of plant should be such that these improved methods can be employed to advantage. For instance, the use of intermitting through the tubing with plunger lift in deep wells that have declined to a comparatively small production has so changed the situation a comparatively small compressor unit can handle at least one well, and sometimes two or more

wells. Such operations are now seen in the Oklahoma City field where two to three wells, making 100 bbls. per well per day or less, are operated by one 90 horsepower unit. Such a compressor unit can be handled by the usual lease attendant, just as he has handled one or more gas engines for operating beam pumps, or for operating a band wheel which is used for actuating pumping jacks in older fields. Under such circumstances the cost of operation of such a plant is reduced to a low point, since gas for fuel is cheap and no extra labor is required.

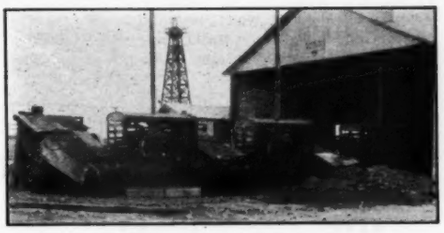
In flush fields, where it may become necessary to get quick action in starting production and when the demand for oil is such the wells must be produced at maximum capacity, it is sometimes advisable to first install compressors belt-driven from electric motors. This procedure could be followed later by removing some of the electric motors and replacing with gas engines, and if additional wells are brought in, it would be feasible to add to the plant by installing direct-driven compressors. Some of the electric driven compressors could be allowed to remain to handle the peak load, if this continues for only a short time, with the idea of discontinuing their use as soon as the peak load is over, and moving these units to other locations where there may be need for them. The direct-driven gas-engine compressors, and the compressors belt driven by gas-engines could then be left in the plant to handle the gas-lift requirements during the settled stage. As production further declines, the belt-driven machinery can gradually be transferred to new wells, or to new fields, following another cycle of the general program laid out as noted in the preceding paragraph.

It is probable if any considerable number of of compressors are installed to handle the peak load, it would be advisable to use a special crew of operators for handling the plant, but after the flush condition is over, and the wells have settled down to a lower rate of production, the regular lease attendants should be trained to handle the plant operation. In this manner, the fullest extent of lease economy could be obtained.

The use of a central plant for supplying compressed gas to operators may be a wise move, if not carried to excess. Such a plant in a new field would have as possible consumers of compressed gas, a large number of wells, and for that reason might have a fairly long life. In order to insure paying out on a reasonable basis, this plant would have to make a fairly high charge, say 8 cents per 1,000 feet of gas (2-pound pressure base). However, such a plant should not be overbuilt, else the promoters of the plant would find themselves with a considerable investment tied up in idle machinery after the peak is over. This plant, if built to handle only a portion of the possible load, would be of advantage in carrying small operators over the period when they are uncertain as to the best method to adopt.

It would not be to the interest of the operator to purchase gas over the full life of the well operation, otherwise he would find himself burdened with a charge too high to be acceptable at a time when he could least afford to pay it, and would then have to adopt some other method, or abandon the well prematurely. The operator could install a plant to handle part of the load, thereby obtaining a high load factor, allowing the customs plant to handle a portion of the load during the period of peak production. The plant of the operator would carry the complete operation after the wells have declined to a small production. In this way both the lease operator and the customs plant operator would work to mutual advantage.

The charge for compressed gas purchased by small operators in the Oklahoma City field was first placed at 6 cents per 1,000 feet (2-pound pressure base) but it was seen this price was not sufficient to provide for depreciation of the plant over a short period of time, as well as cover operating costs and provide a fair margin of profit, consequently the price was increased to 8 cents per 1,000 feet on 2-pound pressure base, equivalent to 7 cents per 1,000 feet on atmospheric pressure base. During the period when bottom-hole flowing pressures were high and daily production was large, the consumption of input gas was low, that is, from 500 to 2,000 feet per barrel, and the cost of compressed gas per barrel, therefore, ranged



Early installed compressor plant in Tonkawa field, Oklahoma

from 4 cents to 16 cents per barrel lifted. This was not a serious burden for a deep well, but after bottom-hole pressures had declined and production was reduced, making the cost 50 cents to $1.00 per barrel for gas, it became necessary to change the method of lifting the oil.

Soon after wells ceased flowing naturally, if the operator had installed a plant sufficient to handle the production when it had declined to 200 or 300 bbls. per day, he would have paid out the cost of the plant in from 6 to 10 months on basis of 7 cents per 1,000 feet, by supplying part of the gas required during the flush production, after which he could see his way clearly through until the well was abandoned by using the small plant he had installed, and accomplish this at a low operating cost per barrel.

Operating costs of a small plant have been shown to be as low as 1 cent to 3 cents per 1,000 feet, and at this cost it has been demonstrated the consumption of input gas is such that small production even in a deep well can be carried profitably to a low point.

Wells in the Oklahoma City field have produced as low as 5 bbls. to 25 bbls. of oil per day at a fair profit by the use of gas-lift methods, properly applied even when accompanied by three to five times as much water.

Gas-lift plants at Tonkawa for the most part consisted of small compressor units with displacement of about 250,000 feet per day, belt-driven from the industrial type of high-speed gas motors. It was found the continuous service of the power units was too severe for this type of engine. The service provided by the type of compressor employed was, however, fairly satisfactory.

Nearly all types of compressors and of power units were employed at Seminole, and furnished a valuable experience for later service in gas-lift operations. The types in use were as follows:

1. Small compressors, having displacement of 300,000 to 500,000 feet per day, driven by electric units of 50 to 100 horsepower.
2. Small compressors, having displacement of 300,000 to 500,000 feet per day, driven by high-speed gas motors of the industrial type.
3. Small compressors, having displacement of 300,000 to 500,000 feet per day, belt-driven from slow-speed gas engines, running at 200 to 300 r.p.m.
4. Small compressors, having displacement of 400,000 to 500,000 feet per day, direct-driven by gas engines of approximately 90 to 100 horsepower.
5. Large compressors of 500,000 to 1,000,000 feet displacement per day, direct-driven by gas engines of 165 to 200 horsepower operating at 180 to 200 r.p.m.

The electric-driven unit was valuable in that it was of the semi-portable type which could be installed in from 5 to 10 days, thereby taking advantage of the time element in getting on production wells that had ceased to flow naturally but which were capable of making from 1,000 to 7,500 bbls. of oil per day if placed on gas-lift. The cost of electric power was approximately 5 cents per 1,000 feet of gas compressed, consequently the operating costs became prohibitive in the later life of the wells.

Small compressors driven by high-speed industrial type of gas motor could be installed quickly, and in that respect were of advantage, but suffered much down time and high cost of repairs.

Small compressors belt-driven from slow-speed gas engines, also compressors direct-driven by gas engines, were quite satisfactory so far as the cost of operation was concerned, but the time required for installation was a disadvantage where a well must await the completion of the plant before it could be produced. These plants required from six to eight weeks to install, and cost from $8,000 to $12,000 per unit, depending on the number of units installed in one plant.

Large compressors direct-driven by gas engines of 165 to 200 horsepower were employed almost exclusively for gasoline extraction in the Seminole field, and were also employed for gas-lift work to a considerable extent. The size of the plant was such a special operating force was required, consequently when lease operations declined to a low point of production, it became necessary to discontinue the use of these plants for gas-lift work. The cost of these large compressor units installed ranged from $12,500 to $25,000 per unit, depending on the size of the plant and on the size of the engine. The time required to complete such a plant ranged from 6 to 10 weeks.

Types of compressor plants employed in the Oklahoma City field

TABLE 1—INSTALLATION COSTS OF COMPRESSOR PLANTS IN THE OKLAHOMA CITY FIELD

Type of plant—	Number units	Total horsepower	Cu. ft. capacity per day	Approximate cost	Cost per M.C.F. per day	Cost per horsepower
Large units, new equipment	10	2,300	11,000,000	$165,000	$15.00	$71.70
Large units, new equipment	5	1,150	5,500,000	85,000	15.50	74.00
Large units, used equipment	7	1,155	5,250,000	40,000	7.60	34 60
Large units, used equipment	6	990	4,500,000	40,000	8.90	40.40
Small units, new equipment	3	570	3,000,000	40,000	13.30	70.00
Small units, used equipment	6	540	2,400,000	23,000	9.60	42 60
Small units, used equipment	4	360	1,200,000	16,500	13.75	46.00

Compressor plant for gas-lift work being installed in Rumania using 90-horsepower units

embrace practically all of those employed in Seminole with the exception of the small type of belt-driven unit using slow-speed engines.

Large compressors, direct-driven by 165 to 230 horsepower gas engines, have predominated in the Oklahoma City field, followed in order of precedence by the smaller size of compressor having displacement of 400,000 to 600,000 feet direct-driven by 90 to 100 horsepower gas engines. The cost of a few compressor plants in this field are approximately as given in Table 1.

The earlier plants built in the Oklahoma City field contained the large type of unit and usually consisted of several of these large units. Later, after the wells in the Wilcox zone ceased flowing, naturally, small plants, consisting of one to five of the large type of compressor unit, were installed in this zone for handling one or two wells.

At a still later date, it was seen small wells could be operated by small individual compressor units for handling plunger-lifts on intermittent flow through the tubing, also for operating the pneumatic head.

Plants, containing three to eleven 90-horsepower units were built for assisting in supplying input gas for one to four wells on individual leases, operated on continuous gas-lift, and on intermittent flow through the casing.

The use of single compressor units for handling wells has been a late development for handling a deep well with very low flowing pressure in the Oklahoma City field, and points the way to a new development in gas-lift operations. This method would seem to make it advisable to consider the use of small compressor units instead of large units for strictly gas-lift work, whether in deep or in shallow wells. If the plant is situated within a reasonable distance of the wells and the stock tanks, it becomes quite feasible for the lease attendant to handle such a compressor unit.

A few examples of the principal monthly operating costs in plants which have high load factors in the Oklahoma City field are given in Table 2. In later operations, if the regular lease attendant handles the plant, the labor cost would be considerably reduced from the operating costs indicated in Table 2, and the cost per 1,000 feet of gas would be appreciably less than those noted. Low costs are dependent upon maintaining a high load factor, and can be obtained if the planning be very carefully done when the equipment is first being installed.

TABLE 2—OPERATING COSTS OF SOME COMPRESSOR PLANTS IN THE OKLAHOMA CITY FIELD

	No. 1	No. 2	No. 3
Total horsepower installed	260	540	2,450
Cost of plant	$16,500	$22,000	$205,000
M. cubic ft. *compressed per month	34,000	72,000	540,000
Labor, per month	500	430	1,555
Lubricating oil and grease	100	65	565
Repairs, etc.	102	105	590
Water	28	25	100
Telephone	...	5	5
Supervision	...	150	300
Approximate total, per month	$730	$780	$3,115
Per M. cubic feet	$ 0.0215	0.011	0.0076

*Atmospheric pressure base.

One type of compressor plant employed in the East Texas field consists of large compressor units employed for gasoline extraction. The residue gas from the gasoline plant is pumped into the field lines at about 300 pounds pressure and employed for gas-lift operations. Nearly 150 wells in this field are connected to such plants.

Several small compressor plants have been installed for starting wells flowing, and for continuous flowing of wells during the time the allowable is being produced.

Up to the present time in the East Texas field, gas-lift operations with the large type of plant are subservient to gasoline extraction. On the other hand, the small units are installed in this field primarily for lifting oil. The small plants can be expanded in the event a larger number of wells is to be placed on gas-lift, or in case the allowable is increased and it becomes necessary to lift a greater quantity of oil than the present plants are capable of handling.

Installation costs in the East Texas field of new compressor units with displacement of 560,000 feet per day are in the neighborhood of $8,500. These plants are employed for handling from 6 to 10 wells at the present allowable rate of production. The cost of the plant averages from $850 to $1,417 per well for the present allowable production, based on installation cost of $8,500 per unit. Used compressors can be installed for $3,000 to $5,000 per unit, capable of handling from 5 to 10 wells, in which case the average cost per well for the plant varies between $300 and $1,000. It is advisable for the operator to make sure any used machinery purchased is in good condition, and is suitable for the purpose, otherwise the final costs may be higher than if he had purchased new machinery which has behind it the manufacturer's guarantee.

It has been observed in a new field, promising to have a life of several years, it is probably wise to install new compressor equipment, since lower maintenance cost and reduced down time will, in time, offset the lower cost of installation of used machinery. However, if the plant is likely to have only one to three years of life, it is quite possible the installation of used machinery would result in larger profit to the operator. Such has proven to be the case in the Oklahoma City field where plants were installed late in the life of the well to be serviced. Of course, it is necessary to be certain used compressors so selected are serviceable for this type of work.

Power for Pipe Line Pump Is Secured Through Economical Installation

By HAROLD K. IHRIG

A new and novel method of powering a rod line pipe line pump has been developed in the Greater Seminole area since the installation of numerous back side pumping units, rod lines and jacks for pumping one or two wells from a key well being produced by the conventional standard steel rig front. With the installation of a jack at a well that had been produced by a standard rig front, which was used to pump oil from lease storage into the pipe line, it becomes necessary to secure power for pipe line pumps from some other source, and this condition brought about the development of the installation shown in the two accompanying photographs.

Rod line installation of a pipe line pump showing well being pumped by a jack

The accompanying cuts show a 3¾-inch by 30-inch rod line pipe line pump installed in a rod line between a back-side pumping unit and a pumping jack. The bridle or frame about the pump is made of 2½-inch tubing with the heads or ends of the frame of 5⅞-inch casing, junk pipe being used throughout. It is of welded construction. When a tank of oil is to be pumped into the pipe line the short pitman shown in an oblique position, at the right end of the frame in the upper photograph, is rotated to a horizontal position and the clevis connected to the piston reins of the pump by means of a pin furnished with the pump clevis. The construction of the framework holding this pitman is shown more clearly in the lower photograph. During the time when oil is not being pumped into the pipe line the short pitman is disconnected and remains in the position shown in the cuts.

When connected the discharge stroke of the pipe line pump is made at the time the sucker rods in the well are moving upward in the hole, and the suction stroke is brought about by the drop of the sucker rods and jack beam at the well shown in the background. This hookup eliminates the necessity of a special rod line to the pipe line pump and the construction and operation of a counterweight or "dummy."

The supports upon which the pipe frame rests is made of 4-inch pipe set in the concrete used as a foundation for the pump. The long rack in which the frame slides is made by splitting a piece of the 4-inch pipe lengthwise into two equal parts, and placing one piece on each side of the pump. These are welded to the posts concreted in the ground so that the 2½-inch frame clears the inside of the 4-inch by approximately one-half inch. Babbit bearings about 6 inches long are then poured in each end of the trough formed by the split 4-inch leaving space between the bearings to be used as a reservoir for waste engine oil for lubrication of the bearings.

In the particular installation shown the well is approximately 4,000 feet deep and is producing about 100 bbls. of oil per day and the pressure in the pipe line is in excess of 500 pounds.

Pipe line pump installed in a pull-rod line in the St. Louis pool, Greater Seminole, Oklahoma

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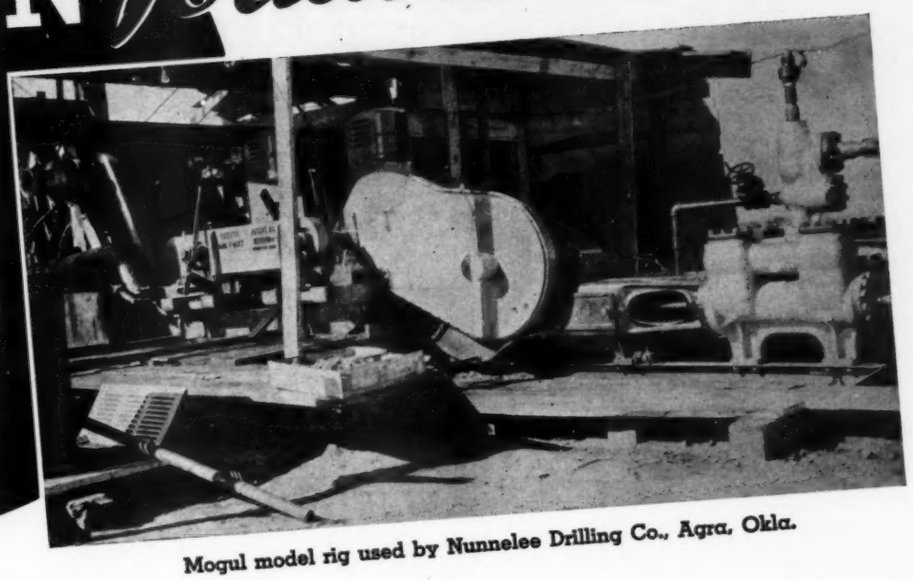

Mogul model rig used by Nunnelee Drilling Co., Agra, Okla.

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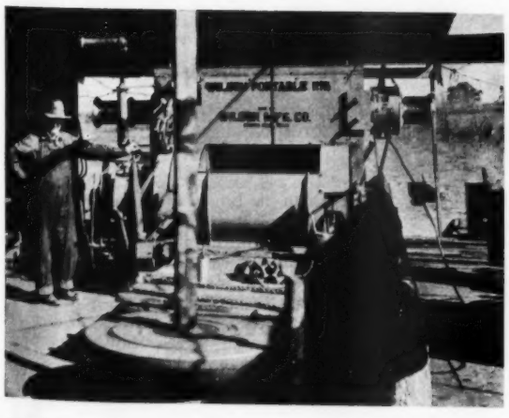

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Greenwood County, Kansas, Operators Build Efficient Paraffin Treating Unit

By HAROLD K. IHRIG

An example of the resourcefulness so dominant in some of the men in the production divisions of the industry may be seen in several of the smaller pools in northwestern Greenwood County, Kansas. Having the ability to overcome problems, as they present themselves, with whatever materials may be at hand in order to keep production costs as low as possible is the outstanding characteristic of several men operating properties of one of the larger companies in the Teeter, Scott, Green and Lapland pools in Greenwood County.

In producing oil from wells in this area the operators are confronted with the problem arising from the rapid deposition of paraffin in the lead lines from the wells to the lease storage tanks and also in the bottoms of the tanks. These lead lines vary from several hundred feet to one-half mile in length and the rapidity with which paraffin is deposited varies from well to well, depending, of course, on the volume of oil produced, the amount of water produced with the oil and the gravity of the oil, which in this locality varies from 38 to 41 degrees A.P.I. Paraffin has at times nearly closed lead lines, causing excessive stuffing box pressures in forcing fluid through the small orifice left by the paraffin. Pressures as high as 500 pounds per square inch have been experienced on stuffing boxes after lines have been given opportunity to

Fig. 1—Self-contained paraffin treating unit for removing paraffin from lead lines

accumulate paraffin. The most pronounced result of this high stuffing box pressure problem was a decrease in production and the excessive amount of stuffing box rubbers needed to keep stuffing boxes from leaking. The necessity of keeping the packing rubbers in such tight compression also had telling effect on the polished rods, causing them to wear quicker than in ordinary operations.

The old practice of "firing" the lead lines was employed for some time in an effort to loosen the paraffin from the lines and allow the fluid to wash it into the tanks, from which it was subsequently drawn off and burned. This "firing" was accomplished by digging narrow, shallow trenches alongside the lead line, pouring crude oil in the ditches and firing it. The resultant heat melted the paraffin in the line to such an extent that it could be forced down the line by the fluid in being pumped from the well.

The practice of "firing" lines was both expensive and inefficient, in that it only partially eliminated the trouble and caused excessive tank draw-offs. Several commercial "paraffin solvents" were tried in an effort to remove the paraffin or prevent its deposition, but through the methods employed did not prove successful.

In an attempt to derive some means of treating lead lines to remove paraffin a resourceful lease foreman and an ambitious pumper, who, it seems, is also a welder, machinist and mechanic, combined their efforts to build a unit for which the need was very apparent. They had, through crude and cumbersome methods, experimented with pumping small volumes of high-gravity gasoline and paraffin solvents through the lead lines and found it to be successful. They set about to build up some sort of pumping unit that would be efficient and convenient. The result of their labors

Fig. 2—View of pump and drum mounting showing suction and discharge connections

is a mobile paraffin treating unit built into the chassis of an old automobile. Figure 1 is a picture of the finished unit. The chassis was salvaged from a junk yard, the motor taken from an old discarded truck and overhauled by the pumper, the pump, a 2½"x3" Myers "Bulldozer," was found in one of the company's tool houses, and the remainder of the unit was taken from junk piles or made by the pumper through the use of welding torches and scrap iron or machined on a small lathe set up in the pumper's garage. The regular transmission and clutch is used with the motor, the driveshaft having been cut off a short distance from the universal joint. A bearing was made and mounted between the main channels of the frame to hold the end of the driveshaft rigid. Near this bearing a small sprocket is fastened to the shaft and is used as power for the pump, transmission being through a small roller chain. Directly behind the pump two oil drums are mounted to serve as tanks for transporting the treating fluid. Figure 2 is a view of the pump and drums showing connections between the drums and the intake of the pump. The discharge connection is also shown.

The problem of removing deposited paraffin from lead lines in an economical manner has been solved in a rather unique way by operators in northwestern Greenwood County, Kansas. Their method of removal is also eliminating the excessive tank draw-offs found necessary in the past. Their treating unit is discussed in accompanying article.

Total cash cost of building this unit has been estimated to be less than $50. The only new material purchased was a storage battery and a set of new tires and several small miscellaneous parts for the motor. The unit has been equipped to be pulled as a trailer behind an automobile. When a well is to be treated the pumper pulls the unit with his car to a small repressure plant on one of the leases, loads the drums with gasoline, mixing it, if desired, with a paraffin solvent manufactured by the company's refineries, then pulling the unit to the well to treat the lead line. Connections are made between the discharge of the pump and the bleeder connections at the well head and the 100 gallons of the treating fluid pumped into the lead line. The time required for a complete treating job ranges from one to one and one-half hours, depending upon the distance from the well to storage tanks at the repressure plant.

One great advantage of using the high-gravity solvents to remove the paraffin from the lead lines

Fig. 3—The unit in operation. On the left is Clair Tietsort and on the right, Earl Allen, the men who assembled the equipment

is that the paraffin is taken into solution and does not build up tank bottoms but mixes with the solvent and the oil and is sold to the pipe line companies in the form of good marketable oil. Tank cleaning in this vicinity has been reduced to a minimum since very little trouble is encountered in the form of emulsified oil. During last winter the operators found it necessary to draw off very little paraffin or oil. The total amount drawn off was approximately 1,500 bbls. less than had been drawn off the preceding winter. This was a great saving considering that the oil was being sold at a little over $1 per barrel.

Some wells produce oil that precipitates paraffin more rapidly than others, filling lead lines in as short a time as two weeks. The usual length of time is six weeks to two months. In such cases where the line is nearly closed it takes pressures in excess of 500 pounds to pump the solvent into the line. By use of the transmission on the treating unit it is possible to obtain enough power at any desired speed to force the solvent into the line at pressures as high as 1,000 pounds per square inch. Figure 3 shows the unit with the men who assembled it. On the left is Clair Tietsort, pumper, and on the right Earl Allen, lease foreman. The unit was connected to a well at the time this picture was taken.

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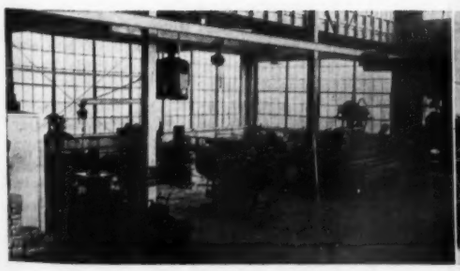

In the machine shop is the latest in a hollow spindle lathe . . . making possible the turning of the finest of pipe threads on drill pipe that has been ordered in blank.

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Repressuring Applied to Various Oil Producing Formations in Kentucky

By NEWELL M. WILDER
Dep't. of Mines and Minerals of Kentucky*

Sand and lime oil producing formations in Kentucky vary sufficiently to make it necessary to take a complete set of cores in each area where repressuring is under consideration. The author outlines the results found when testing a number of core samples taken from the more important fields of the state.

For the past seven months we have been engaged in the work of determining the physical characteristics of Kentucky oil sands, relative to their merits as a media to which repressuring operations may be applied successfully.

For the benefit of those of you who are not familiar with the principles of repressuring I might outline briefly the general idea. Due to the expanding energy of natural gas, which is the reservoir energy stored within the sand and partly in solution with the oil, oil has been made to flow under natural conditions to the producing wells. After several years, this energy has dissipated to the extent that the rate of oil flow has declined and naturally production has reached its final stage, but, the oil-gas ratio was such that the reservoir energy has been expelled before all of the oil could be moved out.

Thus, it has become necessary to introduce secondary methods of recovery, such as acidization, water flooding, repressuring by air or natural gas, etc. Repressuring by air and gas is the most popular method used in this state at the present time. It involves the drilling of new wells arranged in a systematic pattern; the old wells are included in the pattern wherever possible. Close spacing of wells is necessary. The pattern usually consists of five or seven wells arranged so that one newly cored well in the center is surrounded by the remaining four or six and spaced at regular intervals. These are commonly called five-spot or seven-spot patterns. The center well of each pattern is designated as a pressure well into which air or natural gas is injected from the main compressor station. The repressuring fluid is passed down the well through a string of tubing and introduced directly into the pay sand which has been packed off. The result of this artifically applied energy is a radial movement of oil (in uniform sand).

Where permeabilities in the Corniferous (Devonian) of the eastern part of the state vary from zero to 200 millidarcys within 3 feet of core we find that a change in sedimentation has resulted. Where the pay is composed chiefly of sand a change to lime will result in lower permeability; likewise a pay made up chiefly of lime decreases in permeability on approaching admixtures of sand. Shale partings and laminations also decrease the permeability of the pay. The Corniferous is made up of the first, second and third pays; however, all three pays are not always present. It is interesting to note that although the three pays have always been known and logged as limestone we can now definitely say that at least the second pay is sandstone. The difference in repressuring a lime and a sand has prompted us to conduct a study of this condition and after analyzing a number of cores we find that as high as 96 per cent of silica is present in the second pay of the Big Sinking pool. The top part of this pay averages 85 per cent silica; toward the middle it averages from 85 to 53 per cent. The lower part contains lime and shale breaks and runs from high in lime to high in sand. Besides being of value as repressuring data this information can be used in correlation work between the three pays. Permeability in lime which results from the interconnected pore spaces may vary due to different sizes of cavities in different parts of the log. The size of pore spaces in the Corniferous lime of Hart County vary greatly within 2 and 3 feet. It is evident that better control of pressures and volumes of the repressuring fluid can be maintained in the second or sand pay due to the presence of bedding planes and a more uniform porosity. Porosity in the sandy portion is controlled by the number and amount of different sized grains, the cementing material, etc., while in the limes there are no grains to affect such a control. Solution cavities are of varying sizes and may be interconnected both vertically and horizontally. Notwithstanding these pecularities, however, and the fluctuating results represented by the different permeability curves, a laboratory examination of the physical properties including the present oil content of all three pays has indicated their adaptability to repressuring projects. The permeabilities of the lime portions of the Corniferous pay in eastern Kentucky are averaging 7 millidarcys while the sandy portions average 18 millidarcys. The Corniferous lime in western Kentucky averages somewhat higher than 18 millidarcys in permeability.

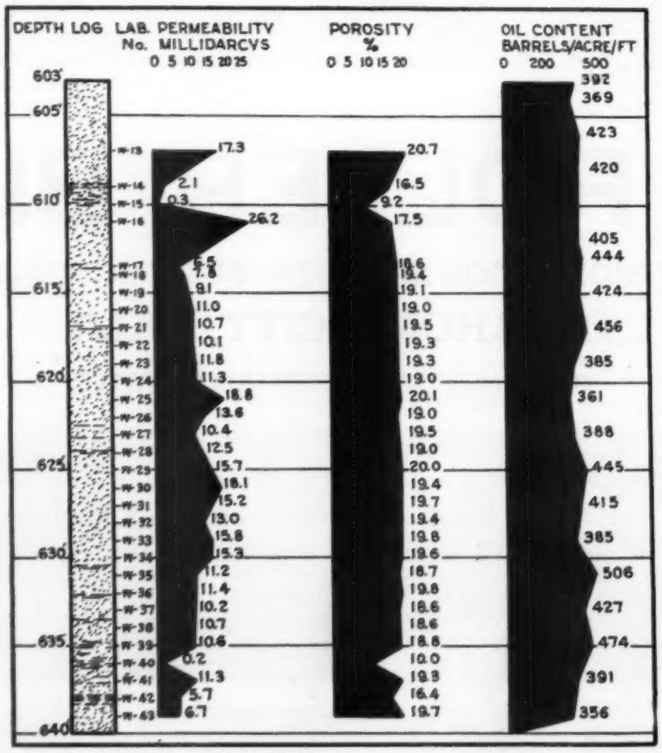
A number of cores from the Jett sand (Miss.) of western Kentucky have been analyzed, some from new pools, and, of course, the oil content in these, which is the first consideration, points to their adaptability to repressuring, providing the other necessary properties are present, and it is true that they are. Although permeabilities in the Jett sand are considerably higher than in the Corniferous (0 to 300 and 400 md.) field practice has been started and has shown that these are not too high to work with. Average permeabilities in the Jett are approximately 80 millidarcys. The presence of lime shale laminations and shale particles is very typical of the Jett.

The condition of this sand is such that some core barrels will not recover a very large percentage of the rock, and it is suggested that at least one or two diamond cores be taken on each property so as to obtain a true record. It is astonishing to note some of the pecularities observed in the first diamond core of the Jett sand taken about a month ago. Among these the reoccurrence throughout the core of large sized pebbles or boulders stands out. These are composed of dense, light colored sand, barren of oil. Normally the core is composed of alternating shale and sand, the sand being very dark as contrasted with the light colored boulders. The important point to note is that ordinarily these barren sands would be logged as breaks and would be misleading in repressuring problems where advantage is taken of breaks in setting packers so that if permeabilities necessitate, more than one string of pressure can be used in the same well.

The Weir sand (Miss.) of eastern Kentucky is thought to be by far the most adaptable to repressuring. The reason for this is because of its combined qualities necessary for an efficient operation. The oil content is adequate; the permeability is fairly uniform, not running lower than .2 nor more than 26.2; and the porosity is very uniform at approximately 19 per cent. Grain sizes and the scarcity of shale have determined these qualities. Ninety per cent of the sand are of one size. The Weir is a light colored, loosely cemented sand.

Among other sands that have been analyzed are the Jones, Bethel, Barlow, Cane Run Stray, and the Jackson. Some lime sands which are tight may be treated with acids and made to conform to respressuring processes. In the laboratory we have increased the permeability over 700 per cent without breaking down the rock.

In the Owensboro district of Western Kentucky, the Jett sand is being repressured and early results have shown increases in production.



Total oil content equals 15,404 bbls. per acre, of 36 gravity oil

*Delivered before Appalachian Geological Society, University of Kentucky, Lexington, November 8.

TECHNICAL ABSTRACTS

Wrought Iron

By JAMES ASTON

Los Angeles meeting A. P. I.

The advance in the manufacture of wrought iron from its beginning thousands of years ago up to the present time is traced. Numerous changes and developments have occurred during that time, but the product has consistently maintained certain fundamental properties. Purity of base metal, and more particularly the inclusion within this matrix of an iron-silicate slag, have been basis characteristics of wrought iron in contrast with other ferrous-metal products. To this slag is ascribed a retarding influence to the direct progress of corrosion, and an ability to lower stress concentration and obstruct the path of incipient fatigue failure.

The properties and present-day production methods are discussed in detail. There has been much effort expended to meet the economic aspects of competition and to bring about expansion in variety of marketable products. This effort has been applied mainly along the line of so-called mechanical puddling. A brief description of the process, which has had a large commercial development, is given. All that was characteristic of wrought-iron quality has been preserved in the newer developments, and the horizon of adaptability has been greatly extended through diversification—both in nature and composition of finished products.

Modern Plug-Back Cementing Methods

By C. P. PARSONS

Presented before Houston meeting of American Institute of Mining and Metallurgical Engineers.

The author points out that in order to get the most successful results from plug-back operations, it is necessary to first condition the well for the job, select the method of plugging back that appears most suitable for the conditions in the well, add a quantity of cement slurry for donation to the well as a scavenger, circulate the excess cement out of the well and determine the location of the actual top level of the plug-back before resuming operations. Preliminary operations intended to improve the results from plug-back operations consist of widening the hole at the upper portion of the formation to be plugged off by either discharging a shot of nitroglycerin or by means of a rotary wall scraper. After these operations the hole is cleaned as thoroughly as possible so that the cement slurry will have a good bond with the grains and pores of the formation to be plugged off.

Plugging-back methods described are balanced method, displacement, plug methods, squeeze jobs and plugging back "thirsty" formations. In the balanced method, the tubing or drill pipe is run to the bottom of the well, raised a foot off the bottom and then circulation established and maintained until the circulating fluid is equalized. A calculated amount of cement is then pumped into the tubing, followed by circulating fluid. The displacement method is similar to the balanced method except that a measured amount of fluid is pumped into the tubing or drill pipe immediately after the cement slurry and the drill stem or tubing need not be opened to atmospheric pressure at the surface. Plug methods involve the use of cementing plugs made of wood or other material being placed in the tubing before or after the cement slurry, or both before and after. Other variations involving special equipment were also mentioned as means of plugging back with wooden plugs. In plugging back by squeeze methods the following operations were described. The tubing is run to the bottom of the hole, raised a few inches off the bottom and a bradenhead connected up between the casing and tubing at the surface. With the bradenhead open the fluid is circulated, then the required amount of cement slurry pumped into the tubing. The bradenhead is closed as soon as the bottom of the cement column reaches the bottom of the well, after which circulating fluid is pumped into the top of the tubing, thereby forcing the cement slurry to go out into the voids and erosions in a permeable formation. Another adaptation of the squeeze job involves the use of a stuffing box arrangement installed on top of the casing at the surface. When plugging back in "thirsty" formations three general methods are used. One of them is the use of regular cement slurry and making successive plug-back jobs by one of the above methods; another is to lighten the cement slurry by using a cement-bentonite mixture, and the last is the use of a self-sealing cement, a cement containing a fibrous sealing material premixed with the cement.

Hydraulic Power Applied to Oil-Well Pumping

By C. J. COBERLY

Los Angeles meeting A. P. I.

Hydraulic-power transmission, which has been applied in other industries, is adapted to oil-well pumping, oil from the producing well being used as the hydraulic fluid. The equipment includes means for separating gas, oil, water, and solids from the operating fluid and a pump for supplying fluid under high pressure. While this method has been used in a limited range of conditions, the results indicate that the method is adaptable to large or small production, deep or shallow wells, and oil of any gravity. The capacity and efficiency of the subsurface unit are practically independent of depth, and the operation of the unit is not affected by the crookedness of the well. Pump loads are continuously indicated, and the displacement is positive and adjustable over a wide range. The subsurface unit is a reciprocating engine direct-connected to a double-acting reciprocating pump. No mechanical connection is made with this unit other than a stationary-pressure-tubing string, which serves to support it from the surface. The engine and pump are combined into a single unit, and are inserted into the regular production tubing—which is set as a permanent string.

High efficiencies and low operating costs are attained through the use of this unit. Fluid levels may be determined or automatically controlled.

First Progress Report of Automotive Survey Committee

By A. LUDLOW CLAYDEN

Los Angeles meeting A. P. I.

A study of the changes in automotive design from the viewpoint of possible, or probable effect on petroleum products is presented. There is only one recorded case in history where great changes were made in the automotive design to compensate for a change in gasoline. This was the development in carburetion which took place around 1921 to take care of the then considerable decrease on fuel volatility. Practically all other changes have been in the reverse direction, e.g., changes in petroleum productions which have been made to meet changes in automotive demand. Of these the most outstanding is that of increased octane rating. The extent of which automotive vehicles are bought and used varies with their first cost and their cost of maintenance. An increase in the price of automobiles decreases the sales and decreases the petroleum market, and the reverse is equally true. Likewise, an increase in the cost of gasoline discourages the sale of new cars and decreases the use of existing cars.

The proportion of cars requiring over 70 octane is found to be extremely small, actually only 1.4 per cent of all cars registered. Even this small percentage is due almost entirely to a single make of poor combustion chamber design, 312,000 cars out of the 21,500,000 registered December 31, 1934, needed over 70 octane and 250,000 out of the 312,000 were of this one make. Other cars of better mechanical design operate with perfect satisfaction on 68 octane fuel although having actually higher compression and giving better fuel economy. If it were not for the restrictive features in automobile design, the petroleum industry within a few months could greatly improve the starting and accelerating qualities of motor gasoline, somewhat increase octane rating, and at the same time effect substantial economies in the cost of refining and in the volume of crude oil required per gallon of gasoline. The average regular-price gasoline today has an octane rating only required by, and only appreciated by, less than 30 per cent of all the cars in which it is used. Such gasoline unquestionably costs slightly more to produce than fuel of 65 octane, which would completely satisfy the rest of the market. Simultaneously, the industry is unable to provide volatility which would be realized instantly by 78 per cent of the users because of the shortcomings of about 22 per cent of the cars on the road.

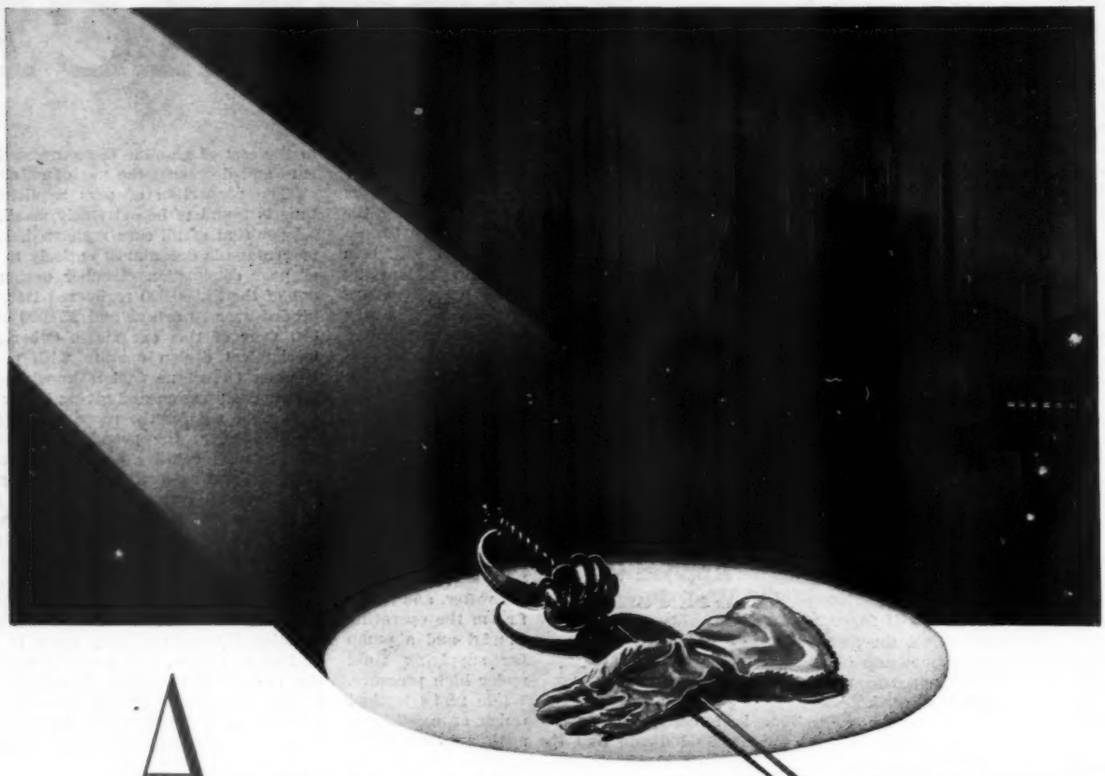
The trend toward the use of E.P. lubricants is shown to be just about as definite as the trend toward higher compression ratios was in 1930. Of the total number of the 1936 model cars which will be manufactured, it seems certain that over 50 per cent will carry extreme pressure-lubricant recommendations. The seriousness of this situation is that quite a number, and probably most, of the E.P. bases which are at present believed to be the best cannot safely be mixed with conventional transmission greases.

Practical Selection of Improved Lubricants

By L. L. DAVIS
B. H. LINCOLN
B. E. SIBLEY

Los Angeles meeting A. P. I.

The increased need for improved lubricants because of the increased speeds, loads, and temperatures of the modern automotive engine is discussed by the authors. The fact that no single or limited group of laboratory tests can be used to define fully the quality of a lubricant is pointed out. Two possible methods of improving a lubricant are: The improvement of physical characteristics and stability which may be accomplished by special refining methods; and the improvement of the actual ability to lubricate and protect metal surfaces under severe lubricating conditions. The accomplishment of the latter by use of carefully-selected addition agents is considered. Detailed discussion is given of the many factors which must be considered in selecting an addition agent —including load bearing capacity, oiliness, rate of wear and corrosiveness on bearings and cylinders, oxidation and thermal stability, volatility and toxicity. The final proof of quality must depend on actual service tests on the road. The results of laboratory and road tests are given to show that all these requirements can be obtained by addition to the lubricant of a small percentage of the ester of a chlorinated aliphatic acid and a monohydric alcohol such as methyl-α, α-dichlorostearate.



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Even before the acquisition of these companies, Republic was the world's largest producer of alloy steels, including the famous Agathon line, ENDURO perfected stainless steels and the new Republic Double Strength high tensile steels that are lightening the weight of nearly every type of transportation unit. Republic has been the sole maker of rust-resisting Toncan Iron for more than 27 years—the pioneer in the development of electric resistance welded pipe—the maker of Sil-con low-loss electrical sheets and coiled strip.

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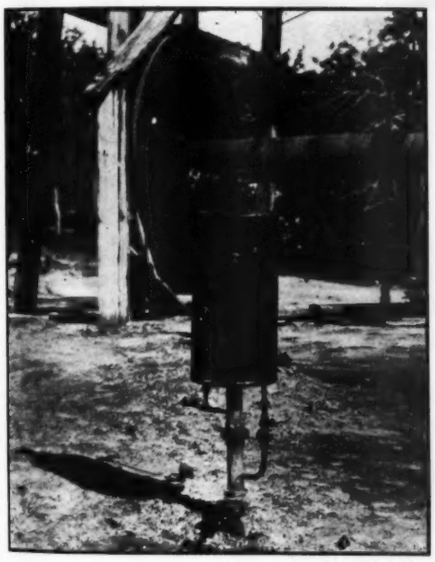
OPERATING IDEAS

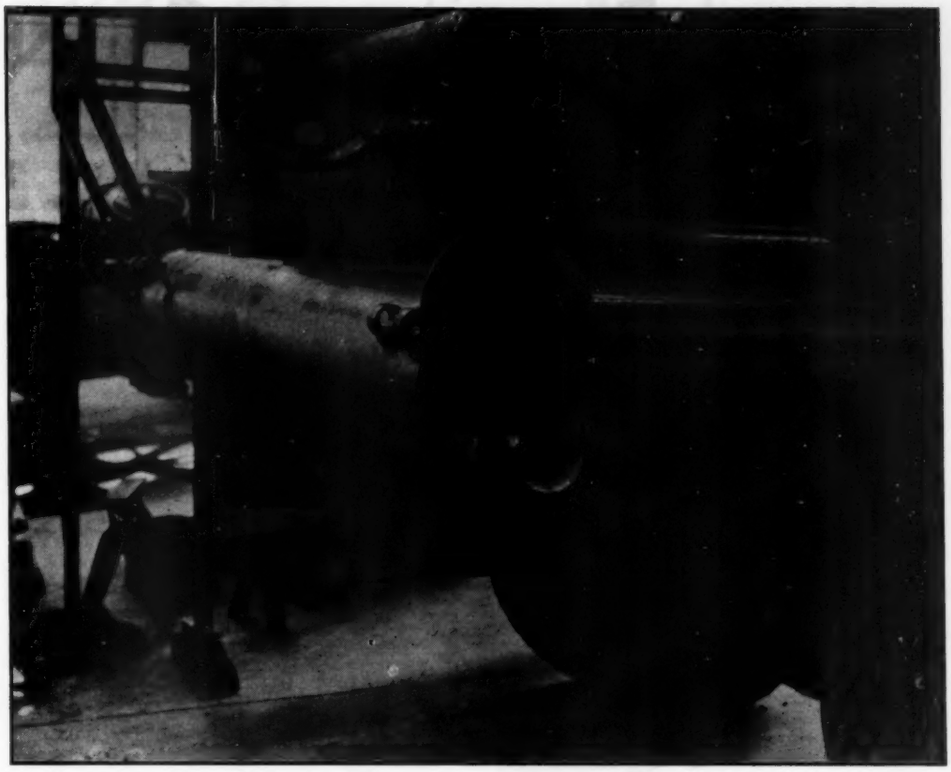
Chemical Lubricator

When wells make water and oil it is usual practice to add a treating compound to this mixture and various kinds of lubricators are devised for this purpose. The one shown in the accompanying picture is a home made affair constructed from a piece of casing with welded bottom and head. The lubricator is filled nearly full of chemical and this is discharged into the lower part of the 2-inch pipe forming a support for the lubricator, through the 1/4-inch pipe line shown at the right. This line is fitted with a needle valve and sight feeder so the rate of feed of the chemical into the pipe line can be closely regulated. The upright 2-inch pipe at the bottom of the lubricator drum serves two purposes, a



support for the drum and a connection to the buried pipe line. The upper end of this 2-inch pipe is blanked by the bottom of the lubricating drum and below the feed line is provided with a valve control entrance to the pipe line below. As the oil in the pipe line is under some pressure it would rise in the feed line and enter the lubricating drum if some means was not providing for equalizing pressures within this drum. It will be noted that there is a small pipe from the upper part of the 2-inch supporting pipe into the bottom of the lubricating drum. This 1/4-inch pipe leads up to near the top of the drum on the inside and pipe line pressure will force gas accompanying the oil up into the top of the drum above the fluid and in this way the pressure within the pipe line and lubricating drum is equalized and the rate of feed of the chemical can then be regulated by the needle valve.

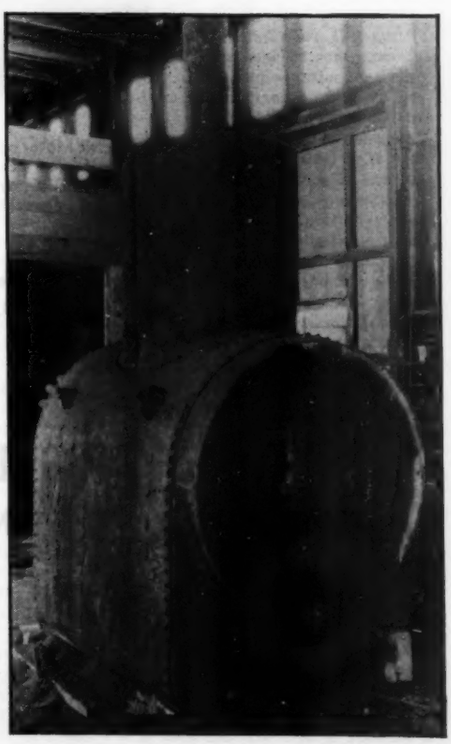
Casing Used at End of Truck Provides Convenient Tool Box



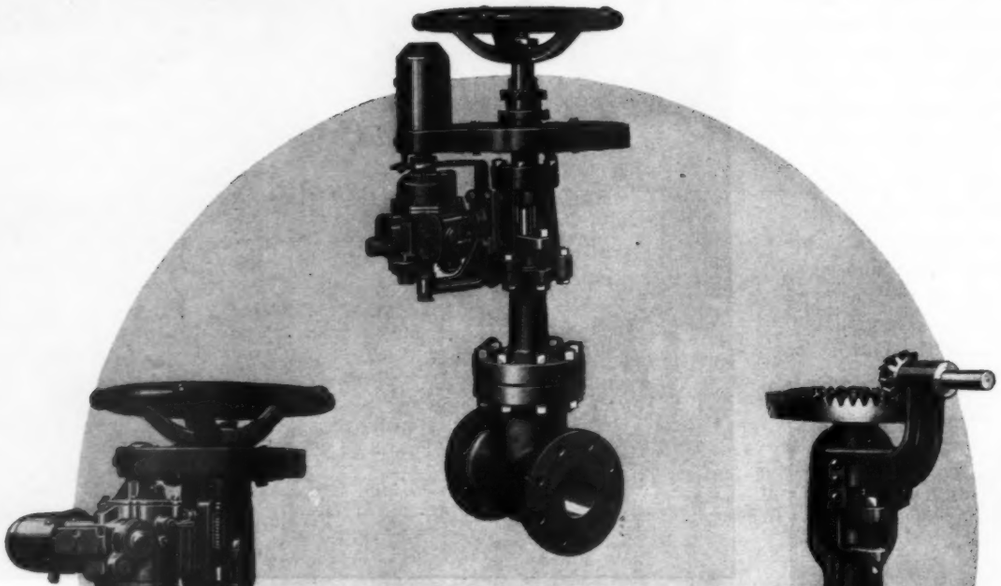
One oil company has constructed a truck bed of welded steel pipe thus forming a bumper at the end of the bed for skidding heavy loads while loading or unloading the truck. The bed consists of 6-in. pipe for the sides and 10-in. for the rear. The interior of the 10-in. pipe also serves as a tool box for carrying wrenches, bars, and other equipment. The rear pipe is converted into a box by welding a pieceof scrap steel over one end and hinging at door equipped with hasps on the other end. It can be fitted with a lock if necessary.

Boiler Used as Heating Plant

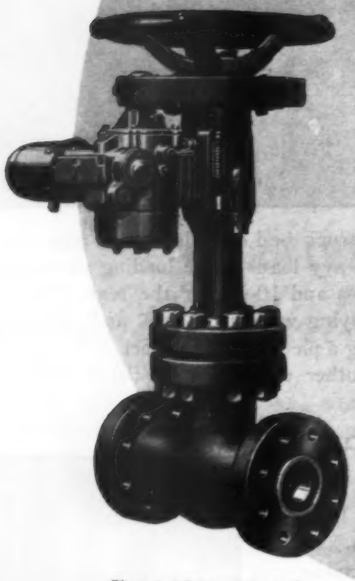
One major oil company has found a new use for oil country boilers after they have become unsafe for generation of steam. The boiler section shown in the accompanying photograph was converted into a heating plant by cutting a 25 H.P. drilling boiler in two sections, the dome section containing the fire box being used. The crown sheet inside the fire box is slotted allowing heat to circulate around the sides of the boiler and dome, yet acting as a protection to the side walls. This unit is fired with coke from the company's own refinery located near by, however other fuels may be used. Although the plant is used only during winter months it was estimated that savings amounted to approximately $25 per month. When coke is burned it is necessary to cover the bottom and sides with a checker work of fire brick and the most convenient way to cover the base is to cut ordinary fire brick into four equal parts and throw into the fire box enough pieces to completely cover the metal base. Coke requires little bottom air but an accumulation of ashes under the grate must be avoided.



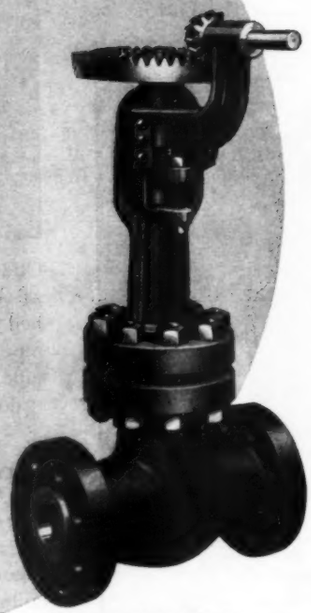
REMOTE CONTROL



Drop forged steel Gate Valve operated by Air Motor.



Electric Motor operated drop forged steel Slide Valve. D. C. or A. C. Motors as specified.



Drop forged steel Globe Valve arranged for hand operation. Bevel or spur gears furnished.

Vogt Globe, Gate and Slide Valves, intended for remote control with Electric Motor, Air Motor or hand operation, are available in sizes from 1½" to 4" in Series 30, 60, 90 and 135 inclusive.

DROP FORGED **Vogt** STEEL VALVES

HENRY VOGT MACHINE CO., Inc. LOUISVILLE, KENTUCKY

NEW YORK CHICAGO PHILADELPHIA CLEVELAND CINCINNATI KANSAS CITY DALLAS

Cost of Operating Automotive Diesels Compared With Gasoline Motors

By C. G. ANTHONY
Pacific Freight Lines*

The ultimate goal of all transportation policy is to furnish the people the transportation service which they require in the cheapest and most efficient manner possible.

This principle is, of course, derived from the economic premise that, in the long run, the wealth of society depends upon the efficiency with which natural resources, labor, and capital are utilized—whether in the production of foodstuffs and raw materials, in manufacturing processes, or in the rendering of transportation services. When we have cheap transportation, we have one of the vital elements of prosperity, because prosperity is the condition that exists when there is a profusion of goods widely distributed among the populace.

Where can the high-speed automotive Diesel engine further the effect of this economic principle? Through this agency, can cheap transportation be furnished the people? What are the costs of operating this equipment, and how do they compare to the costs of operation of the gasoline-motored equipment? Does the automotive Diesel have inherent advantages over the gasoline motor; and, if so, what are they?

Economic Questions

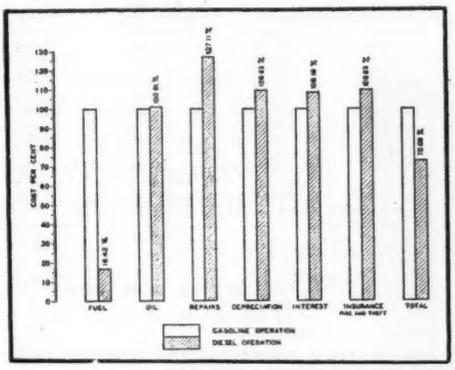
These are the questions that must be answered before the economic value of this type of Diesel engine can be ascertained.

Due to the lack of proper data and cumulative experience, little material of real value has been published on the subject. The manufacturers of the automotive Diesel are rather lavish in their claims for their products, and the owner and operator of Diesel equipment speaks of remarkable performance and great economy of operation—often without adequate information upon which to base a sound conclusion.

The purpose of this paper is to develop conclusions from adequate known facts. Without such facts, conclusions are mere guess work—and guess work is the apex of uselessness.

In order to gather and tabulate sufficient data from which to formulate direct answers to the questions propounded above, a careful audit and study were made of the operating experience of Pacific Freight Lines, probably the largest trucking concern operating any appreciable quantity of Diesel-powered equipment in the United States. Pacific Freight Lines operates throughout the territory lying between Fresno, Calif., on the north and the Mexican border on the south—with an extensive operation, in addition thereto, between Los Angeles and Arizona points. In this territory there is a wide variation in operating conditions. In the main, the operations are all over primary highways, but numerous grades are encountered—and temperature conditions range from the intense heat of the Mojave Desert and Imperial Valley to the moderate temperatures encountered in the operations between the cities lying along the Pacific Ocean, between San Luis Obispo and San Diego.

The main fleet of Pacific Freight Lines consists of 75 trucks equipped with Diesel motors, and several hundred equipped with gasoline motors. From this large fleet it was possible to pick for this study 20 Sterling trucks, of the same design, operating under the same conditions, same gross-weight load factor, and in the same territory. They were all FC-135 models, having three axles, 10 tires, chain drives, auxiliary transmissions, and equipped with air brakes. Ten of the trucks were powered by Cummins Diesel six-cylinder motors; the remaining 10 were equipped with Waukesha, model "AB," gasoline motors. Each of the 20 trucks pulled, at all times, a six-wheel trailer; and under loaded conditions, the total gross weight of truck and trailer was 68,000 pounds. The equipment at times was operated fully loaded, partially loaded, and in some cases empty; but all trucks and trailers were operated with an average gross-weight load factor of 70 per cent, or 47,600 pounds.



Relative cost data showing results when operating fleets of trucks on gasoline and Diesel oils as engine fuels

A study of the operating costs of these 20 pieces of equipment developed the fact that a few of the costs entering into the operation of both the gasoline and Diesel equipment were equal in each case—such as license fees, weight fees, taxes, storage, driver's wages, and public-liability and property-damage insurance. These costs were, therefore, eliminated from the study. The remaining operating costs, viz., fuel, lubricants, maintenance, depreciation, interest on investment, and fire and theft insurance—not being the same for the two types of equipment—were carefully analyzed and compared.

A study was made of the 10 Diesel trucks, for the first four months of 1934, covering gallons of fuel used and its cost, gallons of oil used and its cost, cost of repairs, parts and labor, and the miles operated. These cost figures, and the basic units developed therefrom, are itemized in Table 1.

The same study was made for the identical equipment for the first four months of 1935, and the data and basic units developed are itemized in Table 2.

A.P.I.—The relative costs of operating Diesel-powered, heavy-trucking equipment as compared with like equipment powered by gasoline motors are given here by Mr. Anthony. He shows that operation costs of heavy equipment can be substantially reduced when Diesel engines are used for power in the place of gasoline motors.

A similar study was made for the 10 gasoline-equipped trucks, for the first four months of 1934, and the cost data and basic units are recorded in Table 3. No study was made of this equipment for the first four months of 1935, for the reason that prior to 1935 the gasoline motors had all been replaced with Diesel motors.

The gasoline used in the trucks was the typical second-structure West Coast gasoline of approximately 70 octane number. The Diesel fuel was typical of Los Angeles Basin crude production, and had the following general characteristics:

DIESEL FUEL

A.P.I. gravity at 60° F.	30-32
Viscosity, Saybolt Universal, at 100° F.	40-43
Distillation range, ° F.	420-760
Cetene number	50-55
Diesel-index number	40-48
Conradson carbon residue, per cent	0.05-0.10
Sulfur, per cent	0.5 -0.7

Under the present conditions of distribution Pacific Freight Lines has found it necessary to centrifuge all Diesel fuel before putting it into the delivery tanks. Such materials as tank scale, dust, asphaltic particles, etc., must be removed before going to the engine-fuel system, because otherwise clogging of the filters occurs and causes damage to the finely fitted parts such as the fuel pump, injection nozzles, etc. This latter problem of maintenance of a clean fuel, up to the time of delivery to the consumer, is one that is being studied by the various oil companies; since it eventually must be solved, just as in the case of gasoline distribution. The higher viscosity of the Diesel fuel makes clarification somewhat more difficult, but no doubt the problem can be successfully overcome.

Basic Data

The basic units developed in Tables 1, 2 and 3 have been recapitulated (for ease of comparison) in Table 4, and in this table depreciation, interest on investment, and insurance have been included.

In Table 5 the cost units which were listed in Table 4, on a cost-per-mile basis, have been expanded to a cost-per-million truck miles, as it was much easier to visualize the comparison of cost of operation between the two types of equipment, on a dollar-and-cents basis, magnified a million times, than it is to deal with the cost-per-mile units itemized in Table 4. As Tables 4 and 5 are essentially a recapitulation of the data contained in Tables 1, 2 and 3, all remarks and conclusions will be directed to and drawn from the data contained in the last two tables.

The facts developed by the data contained in Table 4 can be listed as follows:

1. A Diesel motor runs between 60 and 65 per cent further on a gallon of fuel than a gasoline motor.

2. The cost of fuel, per mile, for a gasoline-motored truck, is slightly over six times greater than for a similar Diesel-motored truck.

3. A Diesel motor uses slightly more lubricating oil than does a gasoline motor; and all other expense items, viz., oil, repairs, depreciation, interest, and insurance, are in every case greater for the Diesel-motored truck.

Table 4 shows the combined costs for gasoline-truck operation to be $0.09057 per mile, and the costs of Diesel-truck operation $0.06530 per mile—giving a differential, in favor of the Diesel operation, of $0.02527 per mile.

In Table 5 it is seen that the cost of fuel for a

*Delivered at Los Angeles meeting, American Petroleum Institute. Author's title: "Automotive Diesel Costs."

TABLE 1—DIESEL FUEL USED, LUBRICATING OIL CONSUMED, MILES OPERATED—AND COST OF FUEL, OIL AND MAINTENANCE FOR FIRST FOUR MONTHS OF 1934 AND FOR REFERENCE DESIGNATED AS: GROUP A-34

Truck No.	Fuel used—Gallons	Fuel used—Cost	Oil used—Gallons	Oil used—Cost	Repairs, parts, and labor cost	Miles operated
152*	3,599	$74.20	89	$39.20	$462.54	13,985
174*	4,206	118.52	172½	76.54	677.60	25,503
282*	4,159	116.97	171½	76.73	517.28	22,151
284*	3,750	106.00	170¼	75.32	585.59	24,247
266*	3,211	90.69	101¾	44.80	307.70	16,121
836*	5,711	216.35	292⅝	133.03	816.07	32,779
848*	5,748	240.19	218½	98.32	726.75	38,880
898*	3,928	152.38	154¼	80.70	407.95	25,652
958*	4,990	199.55	174	85.70	439.80	32,025
966*	5,699	230.17	314½	154.63	658.74	36,145
Total	44,011	$1,543.03	1,858¾	$864.97	$5,630.02	268,488

Average cost of fuel per gallon	$0.0351	Miles per gallon of oil	144.4
Average cost of oil per gallon	$0.4653	Fuel cost per mile	$0.00575
Average miles per truck per month	6,712	Oil cost per mile	$0.00322
Average miles per truck per day	224	Repair cost per mile	$0.02097
Miles per gallon of fuel	6.10	Total cost per mile	$0.02994

*Sterling Truck FC-135 Model, with a Cummins six-cylinder Diesel motor, pulling six-wheel, 10-ton trailer.

Weight of truck, empty ..... 16,245 lbs.
Weight of trailer, empty ..... 15,500 lbs.
Legal gross weight of truck and trailer ..... 68,000 lbs.

TABLE 2—DIESEL FUEL USED, LUBRICATING OIL CONSUMED, MILES OPERATED—AND COST OF FUEL, OIL AND MAINTENANCE FOR FIRST FOUR MONTHS OF 1935 AND FOR REFERENCE DESIGNATED AS: GROUP A-35

Truck No.	Fuel used—Gallons	Fuel used—Cost	Oil used—Gallons	Oil used—Cost	Repairs, parts, and labor cost	Miles operated
152*	3,890	$119.57	136½	$65.69	$401.55	22,455
174*	3,872	119.21	132⅝	60.86	521.27	23,224
282*	2,199	67.37	95⅝	45.46	616.53	10,587
284*	3,781	116.40	111¼	51.13	384.13	19,838
266*	1,650	51.02	77¼	35.44	170.64	8,250
836*	6,173	368.25	282⅝	133.04	703.38	41,540
848*	6,342	330.44	242¼	113.63	837.74	38,800
898*	3,166	111.33	87½	41.12	494.94	20,190
958*	6,891	337.96	584¼	163.62	483.14	43,438
966*	3,816	117.59	173	79.87	538.61	19,410
Total	41,780	$1,739.04	1,723¾	$789.86	$5,451.93	247,732

Average cost of fuel per gallon	$0.0416	Miles per gallon of oil	143.8
Average cost of oil per gallon	$0.4583	Fuel cost per mile	$0.00702
Average miles per truck per month	6,193	Oil cost per mile	$0.00315
Average miles per truck per day	208	Repair cost per mile	$0.02200
Miles per gallon of fuel	5.93	Total cost per mile	$0.03221

*Sterling Truck FC-135 Model, with a Cummins six-cylinder Diesel motor, pulling six-wheel, 10-ton trailer.

Weight of truck, empty ..... 16,245 lbs.
Weight of trailer, empty ..... 15,500 lbs.
Legal gross weight of truck and trailer ..... 68,000 lbs.

TABLE 3—GASOLINE FUEL USED, LUBRICATING OIL CONSUMED, MILES OPERATED—AND COST OF FUEL, OIL AND MAINTENANCE FOR FIRST FOUR MONTHS OF 1934, AND FOR REFERENCE DESIGNATED AS: GROUP B-34

Truck No.	Fuel used—Gallons	Fuel used—Cost	Oil used—Gallons	Oil used—Cost	Repairs, parts, and labor cost	Miles operated
160*	6,565	$860.55	115	$60.47	$428.66	21,366
270*	7,553	912.59	124	55.12	299.09	17,662
272*	7,019	830.53	153¾	68.93	157.83	23,075
274*	4,913	545.12	71	31.62	685.67	15,848
276*	7,124	852.63	115½	51.14	372.86	22,651
950*	6,143	742.20	134⅛	64.12	313.36	19,939
956*	6,583	829.12	98	48.82	208.70	19,981
960*	6,638	774.12	89¾	40.61	261.44	19,930
826*	3,295	397.54	119¾	52.68	110.71	9,977
830*	4,245	529.74	128½	69.93	281.49	14,107
Total	69,083	$7,274.14	1,149⅛	$542.45	$3,119.81	184,536

Average cost of fuel per gallon	$0.1216	Miles per gallon of oil	160.5
Average cost of oil per gallon	$0.4727	Fuel cost per mile	$0.03947
Average miles per truck per month	4,613	Oil cost per mile	$0.00294
Average miles per truck per day	153	Repair cost per mile	$0.01689
Miles per gallon of fuel	3.70	Total cost per mile	$0.05930

*Sterling Truck FC-135 Model, with an AB Waukesha gasoline motor, pulling six-wheel, 10-ton trailer.

Weight of truck, empty ..... 15,645 lbs.
Weight of trailer, empty ..... 16,580 lbs.
Legal gross weight of truck and trailer ..... 68,000 lbs.

TABLE 4—RELATION OF BASIC UNITS FOR THE THREE GROUPS A-34, A-35 AND B-34, AS RECAPITULATED FROM TABLES 1, 2 AND 3 WITH THE THREE COST FACTORS DEPRECIATION, INTEREST AND INSURANCE

Basic units—	Diesel Group A-35	Diesel Group A-34	Diesel Group B-34	Average of A-35 and A-34
Average cost of fuel per gallon	$0.0416	$0.0351	$0.1216	$0.0383
Average cost of oil per gallon	$0.4583	$0.4653	$0.4727	$0.4618
Miles per gallon of fuel	5.93	6.10	3.70	6.01
Miles per gallon of oil	143.8	144.4	160.5	144.1
Fuel cost per mile	$0.00702	$0.00575	$0.03947	$0.00638
Oil cost per mile	$0.00319	$0.00322	$0.00294	$0.00321
Repair cost per mile	$0.02200	$0.02097	$0.01689	$0.02148
Total	$0.03221	$0.02994	$0.05930	$0.03107
Depreciation*	$0.02960	$0.02960	$0.02709	$0.02960
Interest†	$0.00296	$0.00296	$0.00366	$0.00296
Insurance‡	$0.00067	$0.00067	$0.00061	$0.00067
Grand total	$0.06544	$0.06417	$0.09057	$0.06530

Cost of gasoline truck per mile	$0.09057
Cost of Diesel truck per mile	$0.06530
Differential in favor of Diesel	$0.02527

*Figured for life of 200,000 miles, less tires and 10 per cent junk value.
†Interest figured on one-half investment, for four years.
‡Interest covers fire and theft only.

TABLE 5—COST OF OPERATING DIESEL AND GASOLINE EQUIPMENT 1,000,000 MILES (FIGURES OBTAINED BY MULTIPLYING THE COST PER MILE FROM TABLE 4 BY 1,000,000). ALSO INCREASE OR DECREASE OF DIESEL COSTS AS RELATED TO GASOLINE-EQUIPMENT COST

Basic units—	Diesel truck	Gasoline truck	Decrease	Increase	Per cent decrease or increase
Cost of fuel	$6,380.00	$29,470.00	$23,090.00	.....	—23.58
Cost of oil	3,216.00	2,940.00	.....	$276.00	+ 9.91
Cost of repairs	21,480.00	16,890.00	.....	4,590.00	+27.11
Depreciation (200,000 miles)	29,600.00	27,000.00	.....	2,600.00	+ 9.63
Interest (one-half investment)	2,960.00	2,660.00	.....	300.00	+ 8.19
Insurance (fire and theft)	670.00	610.00	.....	60.00	+ 9.83
Total	$65,306.00	$90,570.00	$23,090.00	$7,820.00	—27.91
Deduct	$90,570.00	.....	$7,820.00	.....	.....
Net saving	$25,270.00	.....	$25,270.00	.....	—27.91

Diesel motor is 83.58 per cent less than for the gasoline motor, whereas the cost of repairs is 27.11 per cent higher. Incidentally, this is about the same repair ratio that is experienced by the operators of Diesel trucks in Europe. Several reports available indicate their maintenance costs to be 26 to 31 per cent higher than the maintenance on gasoline-motored equipment. Table 5 also shows that whereas the saving on fuel is 83.58 per cent, the other expense items for the Diesel motor are sufficiently greater so that this percentage is reduced to a net of only 27.91 per cent. This represents, however, for 1,000,000 Diesel-truck miles, a saving of $25,260.

Fuel economy is the chief reason for the use of the Diesel motor. According to Table 4, the Diesel-motored truck can be operated for a fuel cost of $0.00638 per mile, whereas the fuel cost for the gasoline-motored truck is $0.03947. The cost of Diesel fuel would, therefore, have to increase 610 per cent before the fuel cost would equalize as between the two types of equipment. Since the net saving on the operation of the Diesel, as shown by Table 4, is only $0.02527 per mile, the cost of Diesel fuel would have to increase 390 per cent to equalize the cost of operation between the two types of equipment. It must be remembered, however, that the gasoline motor, as we see it today, represents the result of 20 years of intensive development and improvement; whereas the automotive Diesel is only in its fourth or fifth year of development—and only in its third year of intensive development—and is at the present time going through its formative stage.

It seems safe to assume that, under a larger scale of production, Diesel motors will be produced at approximately the same cost as gasoline motors, so that there should be little difference in cost as reflected in the items for depreciation, interest on investment, and insurance. It is felt that in a very short time the maintenance cost of Diesel equipment will be reduced to about the same level as the maintenance cost of gasoline-motored equipment. During the past year very pronounced changes have occurred in the design of connecting rods, pistons, liners, new types of valve-rocker arms, valve guards, valve locks, valve keepers, and injectors. The old parts are being replaced with those of new design as fast as they are perfected and proved in the factory. This replacement, incidentally, has been charged to maintenance cost—and with perfection of design such cost will be appreciably reduced.

Twenty-five of the seventy-five Diesel engines in use by Pacific Freight Lines have been equipped with the new parts mentioned above, and a pronounced change in maintenance cost has resulted in the motors so far equipped. The experience with these new parts has not been of sufficient duration, however, to translate the saving into cost per mile.

Since maintenance cost in the operation of the automotive Diesel engine is, and has been, such a moot question, it was felt that the check made over a four-month period might not be conclusive. An additional check was, therefore, made of 22 trucks—consisting of Sterlings, Macks, and Pierce Arrows, equipped with Cummins Diesel motors—for a period of 12 months. This equipment operated 1,462,344 miles, and the cost of repair parts and labor amounted to $30,427.92, or a cost per mile of $0.02086. In comparison, this cost for four months, for the 10 trucks shown in Table 1, is $0.02097 per mile. For the 10 trucks, for the four months shown in Table 2, this cost is $0.0220 per mile; and the average of this cost, as shown in Table 4, was $0.02148. The difference between the maintenance cost per mile of this second miscellaneous group of trucks, calculated over the year, and the average obtained from Tables 1 and 2 is $0.00062, which would amount to only $620 for 1,000,000 miles of operation. This would indicate that the study of the four-month period is just as accurate as that conducted for the longer period, and that the study of the 10 trucks produced the same result as a study of the larger group of 22 trucks would have produced.

The relative cost of Diesel operation vs. gasoline operation is shown graphically here and this gives a quick picture of the figures supplied by Table 5.

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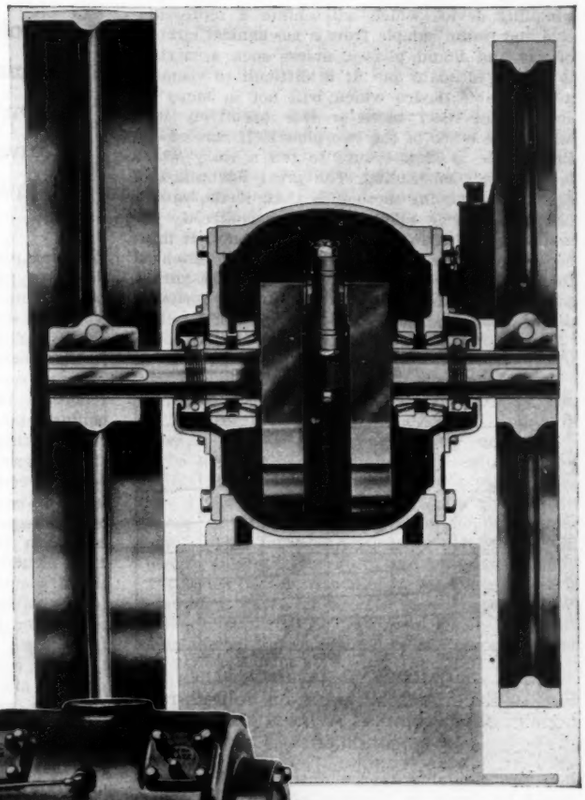
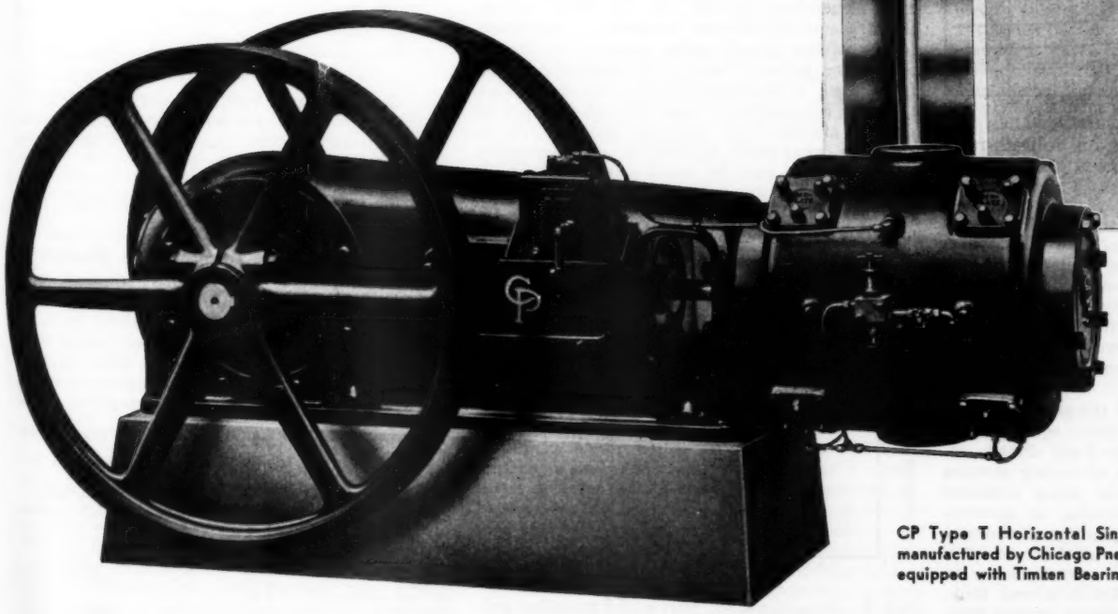
THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO





Tapered Roller TIMKEN BEARING EQUIPPED

CP Type T Horizontal Single-Stage Compressor manufactured by Chicago Pneumatic Tool Company, equipped with Timken Bearings on the crank shaft.

TIMKEN *TAPERED ROLLER* BEARINGS

Energy Relations Involved in Flowing Through Tubing of Producing Well

By B. H. SAGE and W. N. LACEY
California Institute of Technology*

A.P.I.—A primary requisite in attacking the problems presented by the flow of fluids through pipes or porous media is a knowledge of the properties of the fluids involved. Experimental results and an indication of how they may be used to analyze the energy relations involved are given here.

The problem of procuring a representative sample of the fluid flowing in the well is not an easy one. One possible method is to take depth or sub-surface samples near the bottom of the well, while another is to obtain the samples at the other end of the system, viz., at the surface. The first method, depth sampling, requires special equipment and technique, and to a certain extent interferes with normal production operations. One of the least satisfactory features, however, is the great diffculty of designing a sampling device which will obtain a representative and useful sample from a mechanical mixture of gas and liquid phases, unless such a mixture is a very intimate one. It is difficult to visualize a practicable device which will not in many instances fill itself more or less selectively with one or the other of the two phases. If this occurs, the sample is almost sure to tell a story which is somewhat misleading. The great advantage of the depth-sampling method is that, if the sample can be correctly taken, it furnishes directly the material needed for the laboratory study. It must be remembered, however, that if composition of the fluid varies when flow conditions are varied, samples must be obtained and studied for each set of flow conditions. The most favorable situation for obtaining representative depth samples would be found in the case of a well in which conditions were such that the material flowing consisted, at the point of sampling, of but one phase, viz., only liquid or only gas. Under such circumstances the sample obtained should be representative, and would also serve for varying flow conditions, so long as there was only one phase at the point of sampling.

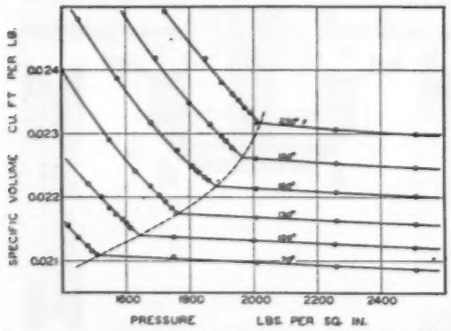


Fig. 1—Experimental results on volume relations of depth sample "A" near bubble-point condition

The method which involves the taking of samples at the surface requires little equipment of an elaborate character, and need not disturb operating conditions. It consists of taking samples from each stream of material being produced at the well head and of obtaining as accurate as possible a measure of the quantity of material in each stream. For example, in the case of a well flowing to a high-pressure trap, thence to a low-pressure trap, and finally to a vent tank, one would obtain, perhaps, samples of gas from each of the traps and from the vent tank, together with an oil sample from the vent tank, the corresponding rates of production of each material being measured. Another one of the possibilities would be to sample the liquid and the gas from the high-pressure trap and measure the corresponding production rates. In each case the most desirable points of sampling would have to be decided upon on the basis of existing conditions. The next step in this method of sampling requires the re-blending of the different materials sampled, in the correct proportions to build a composite mixture representative of the entire fluid efflux from the tubing. This step does require special equipment for careful measurement of fluid quantities (either for liquids or gases) and for forcing these measured amounts quantitatively into a suitable common container for mixing, but this blending can be carried out in the laboratory at any subsequent time. One advantage of the method is that a blend of the gases can be made, and this blended-gas sample can be added to the liquid sample in different proportions corresponding to various gas-oil ratios likely to be encountered over ordinary ranges of production conditions. Such a procedure involves the assumption that the composition of gas and oil will not be greatly altered with changing gas-oil ratio or changing production conditions, an assumption whose validity may be tested experimentally. It is unlikely that this assumption holds rigorously, but there is a possibility that the deviations for moderate variations of gas-oil ratio would not prove to be serious from an engineering viewpoint.

Samples used in the present study were obtained in both of the two ways discussed above. The wells sampled were in the Conroe Field in Texas, and previous experience indicated that the fluid entered the wells as a single liquid phase with no free gas. This situation furnished an opportunity for comparing results of the two sampling methods, under conditions favorable for depth sampling, to ascertain whether or not the surface-sampling method would produce material whose properties were in agreement with that found near the well bottom.

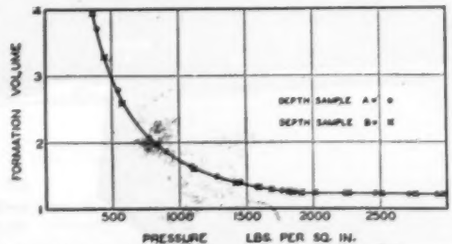


Fig. 2.—Experimental curve of formation volume at 160° F. obtained from depth samples

The well‡ from which the depth samples were obtained had a total depth of 5,170 feet, with the top of the sand at 5,122 feet. Seven-inch casing was set at 5,140 feet, with 5-inch screen from 5,135 feet to 5,168 feet. The tubing was 2½-inch with upset end, with bottom at 5,156 feet. The elevation of the well was 187 feet above sea level. Samples were taken at an approximate depth of 4,600 feet, with the well flowing. It was necessary to obtain the samples several hundred feet off bottom in order to avoid contamination with wash water left in the wells after drilling. There was some evidence that the depth samples used were slightly deficient in gaseous constituents to be completely representative. It was felt by the authors that this effect was not large enough to be detrimental, since the analyses and gas-oil ratios were based upon the samples as used.

The surface samples of gas and oil were taken from a well† operated with a single trap, both samples being removed from this trap at a pressure of 28 pounds per square inch, gauge, and at a temperature of 68° F. Analyses of these two samples, together with those of the depth samples, are shown in Table 1.

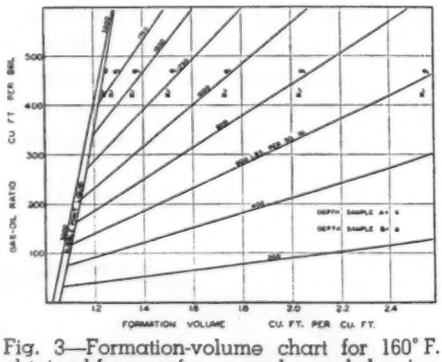


Fig. 3—Formation-volume chart for 160° F. obtained from surface samples and showing, for comparison, corresponding points for the depth samples

Pressure-Volume-Temperature Studies

Pressure-volume-temperature studies[1] were made upon the two depth samples. Figure 1 illustrates the experimental data obtained. It shows values for the volume, in cubic feet, occupied by one pound of depth samples "A" when brought to equilibrium at a series of temperatures and throughout a limited range of pressures, below

‡Humble Oil & Refining Co.'s "South Texas Development Co. No. 8."
† Humble Oil & Refining Co.'s "H. N. Moore No. 18."

TABLE 1—MICROFRACTIONATION ANALYSIS

Component	Surface samples: Gas	Surface samples: Oil	Depth samples: "A"	Depth samples: "B"
Inert§	0.48	....	....	....
Methane	78.28	0.05	4.86	4.44
Ethane	10.00	0.11	1.20	1.07
Carbon dioxide	0.50	....	....	....
Propane	5.62	0.46	1.39	1.27
Isobutane	1.50	0.45	0.59	0.50
nButane	1.65	0.65	0.81	0.82
Pentane	1.96	1.63	1.48	1.38
Heavier	....	96.65	89.67	90.51
Total	100.00	100.00	100.00	100.00
Molecular weight: Heavier fraction		184		172
Vapor pressure: Heavier fraction		30 mm. mercury at 80° F.		35 mm. mercury at 78° F.

§Air, calculated from oxygen determination.

*Delivered at Los Angeles meeting, American Petroleum Institute. Author's title, "Energy Relations in a Flowing Well."

and above bubble point. Bubble point is that condition in which all but an infinitesimal amount of the gas is dissolved in the liquid phase. At pressures higher than that for bubble point, at the temperature in question, the sample would be completely liquid; while at slightly lower pressures, a gas phase would be in equilibrium with the liquid. In the curve drawn through the experimental points for a given temperature, the break point corresponds to bubble-point condition

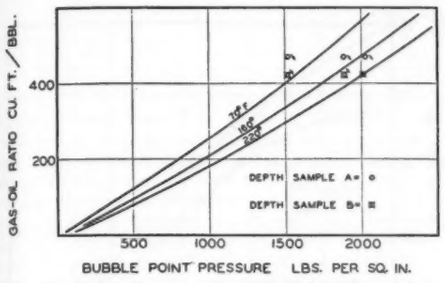


Fig. 4—Solubility curves for surface samples, with values from depth samples shown for comparison

of the sample. A comparison of results for the two depth samples for a temperature of 160° F. and for the range of pressures studied is shown in Figure 2. In this case the volume data are expressed in terms of formation volume, which is the volume in cubic feet occupied by the whole sample, at the specified equilibrium temperature and pressure, per cubic foot of residual oil corrected to 60° F. and a pressure of 14.73 pounds per square inch. The gas-oil ratios for this purpose were computed for separation of gas at 68° F. and at a pressure of 28 pounds per square inch, gauge, in order to correspond to the surface samples.

Pressure - volume - temperature measurements were also made upon two mixtures of surface gas with surface oil, thus giving samples with two different gas-oil ratios. The results of this study are presented in Tables 2 and 3.

Using these values for 160° F. in conjunction with similar values for the surface-oil sample alone and a number of single values for other mixtures obtained for the purpose, a diagram showing formation volume of mixtures of surface samples, for this temperature of 160° F., as a function of gas-oil ratio of the mixture and for a series of pressures, was constructed. This diagram is shown in Figure 3. In it are located points corresponding to the formation volumes found for each of the depth samples at each of the different pressures. It will be seen that the surface-sample curves predict reasonably well the formation volume of a given depth sample when its gas-oil ratio is known. It is believed that the agreement is within the uncertainty of the depth method. Figure 4 shows the solubility values obtained at three different temperatures from the surface-sample study. Again the corresponding points for the two depth samples are shown for comparison.

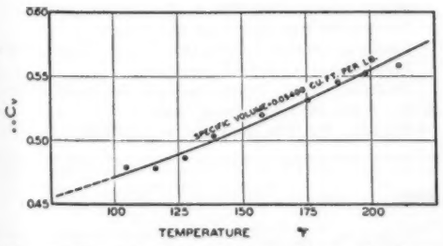


Fig. 5—Experimental values of specific heat at constant volume for depth sample "A"

In order to determine the energy relations during flow in the well, one more set of measurements was needed in addition to the pressure-volume-temperature study. These measurements were made upon depth sample "A".

They consisted of determination of the specific heat of the sample throughout the temperature

TABLE 2—FORMATION VOLUMES FOR A MIXTURE OF CONROE SURFACE SAMPLES

(Having a Gas-Oil Ratio of 102.6 Cu. Ft. per Bbl.)

p=pressure, in lbs. per sq. in., absolute.
p_B=bubble-point pressure, in lbs. per sq. in., absolute.

Formation volumes in cu. ft. of mixture under specified conditions per cu. ft. of oil as measured at 60° F. and at 14.73 lbs. per sq. in., absolute.

p	70° F. (p_B=438)	100° F. (p_B=475)	130° F. (p_B=512)	160° F. (p_B=550)	190° F. (p_B=590)	220° F. (p_B=632)
Bubble point	1.036	1.056	1.077	1.098	1.121	1.144
200	1.580	1.734	1.890	2.043	2.196	2.351
300	1.228	1.317	1.408	1.497	1.589	1.678
400	1.068	1.132	1.199	1.264	1.327	1.394
500	1.035	1.056	1.087	1.138	1.192	1.246
600	1.034	1.055	1.075	1.097	1.121	1.168
800	1.033	1.053	1.073	1.094	1.116	1.139
1,000	1.031	1.050	1.070	1.091	1.112	1.135
1,500	1.027	1.046	1.066	1.086	1.106	1.127
2,000	1.024	1.042	1.061	1.080	1.100	1.121
2,500	1.021	1.039	1.057	1.076	1.095	1.115
3,000	1.018	1.035	1.052	1.070	1.089	1.109

TABLE 3—FORMATION VOLUMES FOR A MIXTURE OF CONROE SURFACE SAMPLES

(Having a Gas-Oil Ratio of 442.5 Cu. Ft. per Bbl.)

p=pressure, in lbs. per sq. in., absolute.
p_B=bubble-point pressure, in lbs. per sq. in., absolute.

Formation volumes in cu. ft. of mixture under specified conditions per cu. ft. of oil as measured at 60° F. and at 14.73 lbs. per sq. in., absolute.

p	70° F. (p_B=1,642)	100° F. (p_B=1,732)	130° F. (p_B=1,818)	160° F. (p_B=1,905)	190° F. (p_B=1,992)	220° F. (p_B=2,079)
Bubble point	1.167	1.187	1.209	1.232	1.258	1.286
400	2,799	3,036	3,277	3,518	3,758	3,998
600	2.027	2.183	2.339	2.499	2.655	2.812
800	1.635	1.752	1.873	1.993	2.114	2.236
1,000	1.406	1.506	1.606	1.705	1.803	1.901
1,250	1.250	1.335	1.417	1.500	1.584	1.666
1,500	1.171	1.232	1.296	1.360	1.426	1.489
1,750	1.165	1.187	1.221	1.273	1.324	1.372
2,000	1.162	1.183	1.206	1.230	1.255	1.299
2,500	1.156	1.178	1.200	1.223	1.248	1.276
3,000	1.152	1.173	1.194	1.216	1.240	1.268

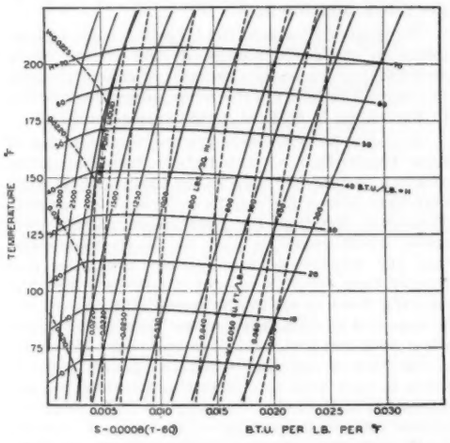


Fig. 6—Temperature-entropy diagram for depth sample "A"

measured[3] with the sample maintained at constant range from 70° F. to 220° F. The specific heat was volume. The experimental results obtained are shown in Figure 5. Calculations based upon the curve shown in this figure and P-V-T results for depth sample "A" presented in Table 4 gave the values of heat content and entropy also shown in this table. The methods used in these calculations have been described elsewhere.[1, 2]

From these data there has been constructed a temperature-entropy diagram for depth sample "A." This diagram is shown in Figure 6. For this material, as in the case of many found in production practice, the changes of entropy with change of pressure at any one temperature are small compared to the changes of entropy with change of temperature. This results in a diagram in which the lines or contours of constant pressure are grouped so closely together as to make accurate interpolation difficult. To avoid this difficulty, entropy (s) itself has not been used as a coordinate, but instead a function of entropy (viz., s—0.0008(t—60), where t is the temperature in degrees F.) has been utilized. In order to obtain an entropy value from the figure, the corresponding value of the abscissa is read off. To this value is added 0.0008 (t—60) for the temperature in question, and the result is the entropy value. For example, it is desired to obtain from Figure 6 the entropy of 1 pound of depth sample "A" when brought to equilibrium at a temperature of 150° F. and at a pressure of 1,000 pounds per square inch, absolute. First the inter-section of the lines for 150° F. and 1,000 pounds per square inch pressure is located. The corresponding reading of the abscissa is found by dropping vertically to the lower coordinate axis, giving s—0.0008 (t—60) = 0.011. Substituting 150 for t, s is found to be 0.011 +0.083 B.t.u. per pound per degree F., absolute. For this same condition the corresponding value of heat content is found by interpolation between lines of constant heat content. In this case the inter-section previously located lies between lines corresponding to H=30 B.t.u. per pound and H=40 B.t.u. per pound. Interpolation gives H=38.7 B.t.u. per pound for the specified condition of the sample. Similarly, the value of specific volume (V), found by interpolation from the diagram, is 0.0304 cubic feet per pound of sample. The values of heat content and entropy given in Table 4 and Figure 6 are based upon the arbitrary datum value of zero for each of these properties at 60° F. and at a pressure of 3,000 pounds per square inch.

To utilize this information in analyzing flow of this mixture (depth sample "A") through the flow string of a well, one must know the temperatures and pressures at various depths in the tubing. This information can be obtained in the field by taking temperature and pressure readings at a series of depths while the well is allowed to flow at a given rate. Two such sets of field measurements for the well from which the depth samples were taken are shown in Figure 7. Solid-

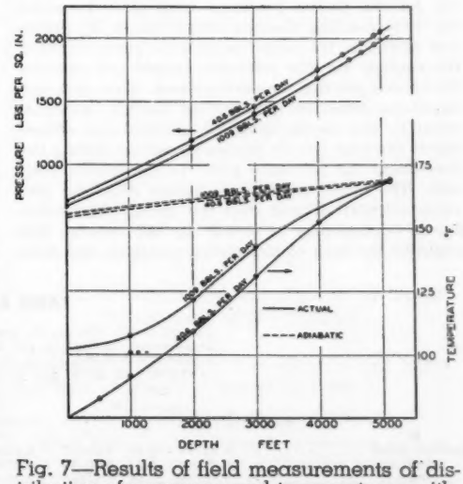


Fig. 7—Results of field measurements of distribution of pressures and temperatures within the tubing of the flowing well

line curves have been drawn through the measured points to give the distribution of values of temperature and pressure within the tubing as functions of depth for each of the two rates of flow.

The average linear velocity of the fluid as it travels up the tubing can be calculated from the

P-V-T data and the field information in Figure 7. Curves for the two flow rates, based upon the data for depth sample "A," are shown in Figure 8. Although the fluid in the tubing consists only of liquid near the bottom of the well, it will be seen that free gas would be expected to appear before any great distance has been traversed.

Calculations by methods previously described[3] gave values for the heat lost to the surroundings as the fluid rises and for the energy involved in

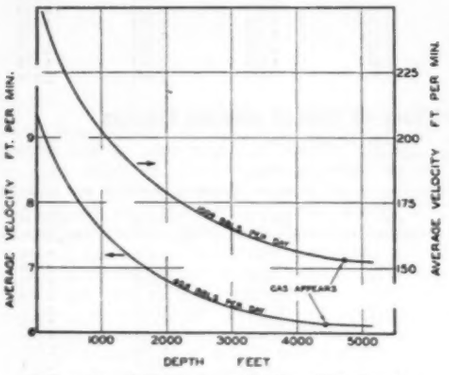


Fig. 8—Average velocity of flow at various depths in the well

frictional effects during the flow. These calculations were based upon the thermodynamic data for depth sample "A," upon the field data from Figure 8, and upon the assumptions that the flowing system was operating in a steady state with regard to time, and that equilibrium was maintained between gaseous and liquid phases in contact. From Figure 7 the values of pressure and temperature corresponding to a series of positions in the tubing were read. From this information the values of heat content and entropy for each position were ascertained from the thermodynamic data for depth sample "A." A point in the tubing at a depth of 5,122 feet below surface, corresponding in elevation to the top of the sand, was chosen as the reference point from which to calculate energy charges. For each chosen position in the tubing the heat lost to the surroundings by 1 pound of fluid in flowing to that position from the reference point is calculated by determining the difference in heat contents at the reference point and at the chosen position and subtracting therefrom the energy per pound of fluid required to accomplish the change in elevation involved. By plotting these values against depth of the chosen position for each of the two rates of flow, the solid curves of Figure 9 were obtained. Next the entropy values for the chosen positions were plotted against the corresponding absolute temperatures. By graphical methods, the area under this curve between the entropy for the reference points and that for the chosen position was determined. This area represents a negative quantity of energy, which is equal to the energy involved in frictional effects minus the heat lost to the surroundings during the flow from the reference point to the chosen position. The latter quantity is known from the previous calculation, and thus the energy dissipation due to friction may be found. By determining this quantity for each of the chosen positions, the data for preparing the dashed-line curves of Figure 9 were obtained. The frictional effects, as here used, include not only friction due to flow past the walls and friction due to slippage and turbulence within the fluid itself, but all other irreversible processes occurring within the system.

In changing the elevation of the fluid from a level equal to that of the top of the sand to the surface, the useful work done amounts to 5,122 foot-pounds per pound or fluid, or 6.59 B.t.u. per pound. In comparison to this utilized energy, Figure 9 shows that, in the case of flow at the rate of 40.6 bbls. of surface oil per day, 40.0 B.t.u. per pound is lost in the form of heat transmitted through the tubing walls to the surroundings, and 0.3 B.t.u. per pound is dissipated in frictional effects. In the case of flow at the rate of 1,000 bbls. per day, the work of elevating 1 pound of well fluid remains the same; but the energy lost through the tubing as heat is 28.0 B.t.u. per pound, and the frictional effects involve 1.0 B.t.u. per pound. It was found in both cases that the energy required to increase the velocity of the flowing fluid from the bottom to the top of the tubing was negligible compared to the other energy quantities. Thus, in spite of the fact that the frictional effects at the greater rate are approximately three times as great as those in the slower flow, the energy residual in the fluid as it reaches the surface is greater, as a result of lower heat loss. It is true, of course, that this residual energy is valueless unless steps are taken to utilize it.

To further illustrate the large influence of heat losses to the surroundings, dashed curves corresponding to each of the two rates of flow are shown in Figure 7 to indicate the temperature distribution in the tubing if no heat losses were permitted.

It should be remembered in the interpretation of these results that, as stated above, the composition of depth sample "A" used in the experimental work may have been a little different from that actually flowing at the time the field measurements were made. Furthermore, it must be clearly understood that the relation between energy quantities and rate of flow for this case of a well in which the entering fluid is all in the liquid state would not be expected to hold true for the more general case when both gas and liquid are entering the bottom of the flow string and when the gas-oil ratio is likely to vary with rate of production. The present discussion is limited to consideration of energy relations within the tubing, and does not concern itself with the effective utilization of reservoir energy.

Conclusions

It has been shown that information obtained from suitable surface samples will permit the prediction, with satisfactory accuracy, of the volume properties of depth-liquid samples for the case when no free gas is present in the well at the point of sampling.

The large temperature change during the flow process here considered is due primarily to conduction of heat through the tubing wall to the surroundings, and only a small fraction of this change results from changes in state of the fluid, as is indicated by the dotted-line curves of Figure 7.

In the particular case studied, the dissipation of energy as the result of frictional effects is a minor factor in the energy changes occurring during the flow through the tubing, even for rates of flow greater than the maximum here reported.

Acknowledgments

This work was carried out as part of the studies being made upon hydrocarbon behavior by Research Project 37 of the American Petroleum Institute. Thanks are due the Institute for interest and support.

The authors wish to express their great indebtedness to those members of the technical and research department of the Humble Oil & Refining Co. who cooperated so cordially in this investigation.

J. E. Sherborne and H. S. Backus assisted materially in the experimental determinations.

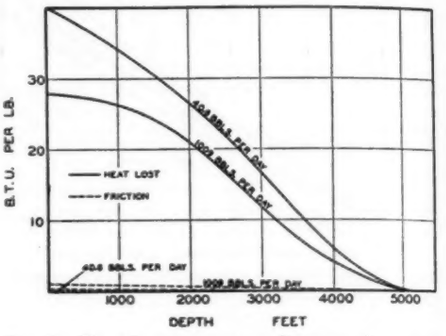


Fig. 9—Heat lost to surroundings and energy involved in frictional effects for flowing well

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[3]W. N. Lacey and B. H. Sage, Drilling and Production Practice, 1934, 89-95, published by Amer. Pet. Inst., New York (1935).

The Engineer Knows, But Does the Average Customer?

The average autoist does not know the extent to which the various moving parts of his engine are subjected to rubbing and the "Sales Engineer", house organ of the Standard Oil Co. of Ohio has summarized certain facts in simple form, to make a better understanding possible. The "Engineer" says:

"Point out to him that in the average six cylinder automobile 1000 miles of driving produces results which approximate the following:

Crankshaft—3,000,000 revolutions.
Camshaft—1,500,000 revolutions.
Valves—1,500,000 individual motions.
Pistons—3,000,000 individual motions.
Distributor—1,500,000 rotations.
Breaker points—9,000,000 circuit interruptions.
Spark plugs—1,500,000 fuel charges ignited.
Coil—9,000,000 electrical discharges.
Ignition cables—195,000,000 volts transmitted.
Fuel pump—1,500,000 pulsations.
Assembly from transmissions on thru driveshaft—3,000,000 revolutions; and
Wheels- 750,000 complete revolutions.

TABLE 4—THERMODYNAMIC PROPERTIES OF CONROE DEPTH SAMPLE

Gas-oil ratio, 470 cu. ft. per bbl.
p=pressure, in lbs. per sq. in., absolute.
v=specific volume, in cu. ft. per lb.
s=entropy in B.t.u. per lb. per deg. F., absolute.
Mass per cent of gas, 8.8 per cent.
p_b=bubble-point pressure, in lbs. per sq. in., absolute.
h=heat content, in B.t.u. per lb.

	70° F. (p_b=1,513)			100° F. (p_b=1,642)			130° F. (p_b=1,768)			160° F. (p_b=1,881)			190° F. (p_b=1,965)			220° F. (p_b=2,025)		
p	v	h	s	v	h	s	v	h	s	v	h	s	v	h	s	v	h	s
Bubble point	0.02109	—0.05	0.01695	0.02140	13.74	0.02529	0.02175	28.37	0.05992	0.02218	43.87	0.08474	0.02265	60.35	0.11019	0.02316	77.76	0.13598
300	0.06700	1.24	0.02664	0.07228	15.72	0.05328	0.07828	30.98	0.07982	0.08512	47.01	0.10635	0.09292	63.65	0.13280	0.10128	81.50	0.15942
400	0.05155	0.36	0.02396	0.05535	15.17	0.05021	0.05979	30.24	0.07642	0.06470	46.07	0.10262	0.06996	62.75	0.12886	0.07510	80.30	0.15528
500	0.04230	0.57	0.02178	0.04563	14.76	0.04791	0.04920	29.70	0.07381	0.05292	45.43	0.09984	0.05673	62.03	0.12598	0.06070	79.51	0.15229
600	0.03650	0.34	0.01998	0.03928	14.44	0.04594	0.04238	29.31	0.07173	0.04545	44.97	0.09763	0.04855	61.51	0.12370	0.05168	78.95	0.14994
700	0.03238	0.17	0.01845	0.03478	14.20	0.04429	0.03728	29.01	0.06998	0.04000	44.62	0.09579	0.04280	61.12	0.12180	0.04560	78.54	0.14800
800	0.02940	0.04	0.01713	0.03150	14.01	0.04286	0.03375	28.77	0.06847	0.03612	44.34	0.09421	0.03858	60.82	0.12017	0.04102	78.22	0.14633
1,000	0.02550	—0.10	0.01495	0.02716	13.77	0.04049	0.02900	28.45	0.06596	0.03086	43.95	0.09159	0.03269	60.39	0.11749	0.03467	77.76	0.14363
1,250	0.02288	—0.13	0.01279	0.02406	13.65	0.03818	0.02544	28.26	0.06352	0.02694	43.72	0.08905	0.02840	60.12	0.11491	0.02978	77.48	0.14104
1,500	0.02115	—0.05	0.01163	0.02211	13.68	0.03631	0.02326	28.24	0.06159	0.02445	43.68	0.08706	0.02565	60.07	0.11296	0.02678	77.43	0.13902
1,750	0.02164	0.62	0.01046	0.02137	14.02	0.03513	0.02180	28.36	0.06002	0.02275	43.77	0.08546	0.02370	60.16	0.11134	0.02465	77.51	0.13741
2,000	0.02100	1.33	0.00996	0.02132	14.70	0.03456	0.02170	28.95	0.05932	0.02212	44.14	0.08439	0.02261	60.42	0.11008	0.02329	77.74	0.13609
2,250	0.02094	2.05	0.00948	0.02127	15.38	0.03401	0.02164	29.59	0.05870	0.02206	44.73	0.08369	0.02255	60.95	0.10927	0.02308	78.17	0.13516
2,500	0.02088	2.77	0.00900	0.02121	16.07	0.03349	0.02158	30.24	0.05811	0.02200	45.34	0.08301	0.02247	61.49	0.10850	0.02300	78.64	0.13428
2,750	0.02084	3.49	0.00854	0.02116	16.77	0.03298	0.02152	30.90	0.05754	0.02194	45.95	0.08236	0.02240	62.04	0.10775	0.02293	79.12	0.13342
3,000	0.02080	4.21	0.00808	0.02112	17.47	0.03248	0.02147	31.56	0.05698	0.02188	46.57	0.08171	0.02234	62.60	0.10701	0.02286	79.60	0.13257

Rotary-Drilling Line Evaluation Must Be Based Upon Complete Records

By K. N. SAATJIAN and V. V. MASON
The Texas Company — California Oil Co. of California*

Rotary-drilling lines have been developed, with respect to grade of material and construction, to such an extent as to assure reasonably uniform performance under normal operating conditions. And yet—mostly due to the extremely complex and variable nature of static and dynamic forces involved, and partly due to the lack of a uniform system of evaluating same—the available service records have been very erratic, and the results most inconsistent.

This subject is now being reviewed in order to correlate, if possible, the various forms now in use, and to recommend a uniform system for evaluating drilling-line service. It is not expected, of course, that every wire-rope user will find it expedient to keep field-service records; neither do we believe it practical to formulate all the forces to which rotary-drilling lines are subjected in the course of drilling an oil well. All that it is hoped to accomplish is that, when and if service records are kept, standard forms will be followed in order that the information so obtained may permit reasonably fair comparison.

As a basis for this work, a questionnaire was forwarded to a representative group of wire-rope manufacturers and users. A summary of the ques-

ROTARY-DRILLING LINE-SERVICE RECORD

1. Well No.
2. Manufacturer
3. Reel No.
4. Size and length
5. Construction
6. Grade
7. Pipe size and weight
8. Drum diameter ____ grooved or plain
9. Crown-block sheave diameter
10. Traveling-block sheave diameter
11. Lubrication*

DATE	DRILLED		MEAN DEPTH	(a) NO. OF ROUNDS TRIPS	(b) TON-MILES PER ROUND-TRIP	(a x b) TOTAL TON-MILES	REMARKS
	FROM	TO					

(c)—SUM OF TON-MILES
(d)—TOTAL FOOTAGE DRILLED ( )
2½ per cent of (d) to be added to (c) for depths 2,000 ft. or more.
GRAND TOTAL, TON-MILES
TON-MILES PER FOOT OF LINE

Fig. 1—Suggested form of rotary-drilling line service record

tionnaire is designated as Exhibit "A." In answering the questionnaire, practically all operators expressed a desire to have a uniform system established. It also became apparent that, with the exception of three operators who use "footage drilled" as a yardstick for evaluating the line service, all others keeping service records are using the Anderson ton-mile formula or a modified form thereof. We see no reason why "footage drilled" should not prove a suitable unit in drilling shallow wells in familiar territory, with standardized equipment and uniform drilling methods. Obviously, however, the system is inadequate to meet general drilling conditions.

*Delivered before Los Angeles meeting, American Petroleum Institute. Author's title, "Evaluation of Rotary-Drilling Lines."

A.P.I.—In an endeavor to develop a standard method for evaluating wire-rope service the authors present a formula, including an alignment chart for graphical solution, for determining the work done by drilling lines. A discussion of safety factors, line speed, loading, and methods of attaching the rope to the rotary drums are given.

The Anderson formula,† as introduced by H. H. Anderson, of the Shell Oil Co., deals with static loads only. The work performed by the drilling line is expressed in formula (1), where:

n = number of stands.
l = length of one stand, feet.
L = length of string or depth of hole, feet.
w = weight of pipe per foot, pounds.
M = weight of traveling block, hook, links, elevator—pounds.
T.M. = ton-miles.

$$\text{T.M. per round-trip} = \frac{(n + n^2)\,wl^2 + 4nlM}{5{,}280 \times 2.000}$$

or (1)

$$= \frac{wL\,(1 + L) + 4LM}{5{,}280 \times 2{,}000}$$

By assigning the proper figures for weight and length and dividing by 2, the above formula will express the work done in setting casings.

The application of this formula and the underlying principles have been generally accepted by the industry, and any modification or simplification adopted or proposed by individual operators has been in the nature of assigning empirical values to certain indeterminate factors—or an attempt to simplify field and office work. It has been proposed by one operator, for instance, to substitute wL^2 for $wL\,(1 + L)$ in formula (1). The change would assume that a full string of pipe is being handled as a unit. The assumption is contrary to actual field practice, and the result would reflect from 1 to 10 per cent greater ton-miles in favor of Anderson formula—depending upon the depth of the hole.

It is to be noted that the Anderson formula contains two elements subject to variation: w, the weight of pipe; and M, the weight of traveling-block assembly. Some of the most important factors affecting these items, together with minimum and maximum limits, are as follows:

Buoyancy

Apparently a buoyancy factor is being used by several operators. When floating a casing in place, this factor becomes negligible. The drill pipe, however, loses 6 to 12 per cent in weight—depending on the initial weight of drill pipe and the specific gravity of the fluid.

†A.P.I. Bull. 7, vol. 9, Jan. 31, 1928; Proc. 8th Annual Meeting, Chicago, Ill., Dec., 1927.

The effect of buoyancy is expressed in formula (2), where:

B = weight of drilling fluid per cubic foot.

Weight of fluid displaced by 1 lineal foot of pipe

$$= \frac{3.53 \times w \times B}{1{,}728} = 0.002wB \qquad (2)$$

Formula (1), with buoyancy factor, thus becomes:

$$\frac{w\,(1 - 0.001 \times B)\,L\,(1 + L) + 4LM}{5{,}280 \times 2{,}000} \qquad (3)$$

Table 1 indicates the effect of buoyancy on drill pipe.

Tool Joints

The A.P.I. regular tool joints and corresponding size full-hole tool joints weigh practically the same; and, on the basis of two sets of tool joints per stand of drill pipe (90 feet) they add 7 to 18 per cent to the hook load—depending on the size

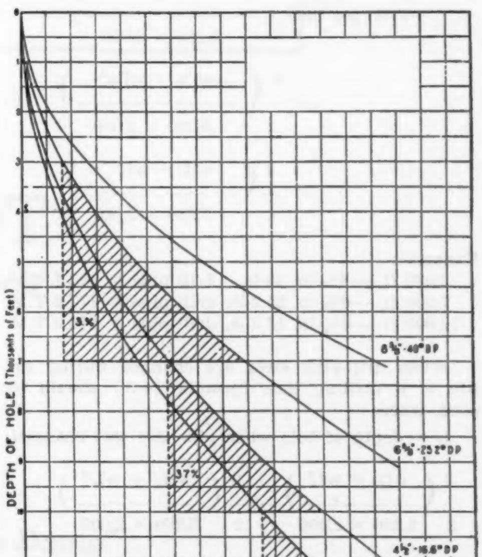


Fig. 2—Ton-mile service due to drill-pipe movements while drilling

and weight of drill pipe. The effect of tool joints on weight of pipe is indicated in Table 2.

Drill Collars

There seems to be no standard practice with respect to size and length of drill-collar assemblies; 60 to 180 feet will probably cover the field. In Table 3 are listed the average weights of drill collars and corresponding drill pipes. It is apparent from this list that drill collars will impose 4 to 17 ton-miles additional service on the line per round-trip.

Bits, Core Barrels, Reamers

In Table 4 are listed the approximate weights of cutting tools, reamers, etc. It is apparent from

this list that 2 to 4 ton-miles of service per round-trip are added to drilling lines due to bits, etc.

Drill Stem, Swivel-and-Hose Assembly

As indicated in Table 5, drill stem, swivel-and-hose assemblies add about 5 to 15 ton-miles per hole of 2,000 to 10,000 feet.

It is further to be noted that, in the usual process of drilling, the entire string of pipe is lifted the length of the drill stem three times per

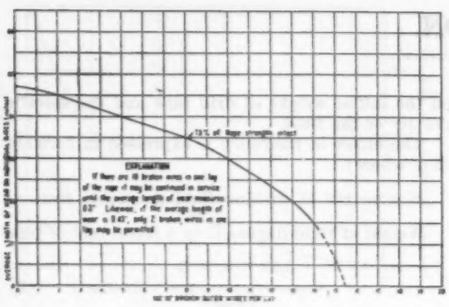


Fig. 3—Permissible length of wear and number of broken wires in 1-inch, 6x19, 1-9-9, A.P.I. grade "J," regular lay hemp-center drilling lines—based on 3.75 minimum factor of safety

stand, adding 23 to 274 ton-miles per hole—depending upon the depth and the size of pipe used. This factor is expressed in formula (4), where the average length of drill stem is assumed to be 45 feet, or $\frac{1}{2}$:

$$\text{T.M. per hole} = \frac{3(n + n^2)\, wl \times \frac{1}{2}}{5{,}280 \times 2{,}000}$$

$$= \frac{3}{2}\left(\frac{wl^2n + wl^2n^2}{5{,}280 \times 2{,}000}\right) \quad (4)$$

$$= \frac{3}{2}\left(\frac{wlL + wL^2}{5{,}280 \times 2{,}000}\right)$$

Example:

2,000 ft. —8⅝-in. 40-lb. drill pipe = 23.7 T.M.
7,000 ft. —6⅝-in. 25.2-lb. drill pipe = 177.6 T.M.
12,000 ft. —3½-in. 13.3-lb. drill pipe = 274.0 T.M.

When drill-pipe sizes are changed during the life of a drilling line, formula (4-A) should be used, where:

L' = depth of hole when pipe size was changed.

$$\frac{3}{2}\left(\frac{wlL + wL^2}{5{,}280 \times 2{,}000}\right) - \frac{3}{2}\left(\frac{wlL' + wL'^2}{5{,}280 \times 2{,}000}\right)$$

$$= \frac{3wl}{2}\left(\frac{L - L' + \frac{L^2 - L'^2}{1}}{5{,}280 \times 2{,}000}\right) \quad (4\text{-A})$$

Traveling-Block Assembly

This item affects the value of M in formula (1). And, as shown in Table 6, the combined weight of various parts of the assembly now in general use ranges from 3 to 8 tons.

Service Chart

The limits of tangible static-load factors are summarized as follows:

Buoyancy removes 6 to 12.8 per cent from weight of drill pipe.

Tool joints add 7 to 18.4 per cent to weight of drill pipe.

2,000-ft. hole—15,000 lb. $\dfrac{\frac{2{,}000}{90} \times 3 \times 15{,}000 \times 54}{5{,}280 \times 2{,}000}$

$$+ \frac{2 \times 15{,}000 \times 54}{5{,}280 \times 2{,}000} = 15.25 \text{ T.M. per hole.}$$

7,000-ft. hole—13,000 lb. $\dfrac{\frac{7{,}000}{90} \times 3 \times 13{,}000 \times 54}{5{,}280 \times 2{,}000}$

$$+ \frac{2 \times 13{,}000 \times 54}{5{,}280 \times 2{,}000} = 15.6 \text{ T.M. per hole.}$$

10,000-ft. hole—6,000 lb. $\dfrac{10{,}000 \times 3 \times 6{,}000 \times 54}{90 \times 5{,}280 \times 2{,}000}$

$$+ \frac{2 \times 6{,}000 \times 54}{5{,}280 \times 2{,}000} = 10.3 \text{ T.M. per hole.}$$

TABLE 6—TRAVELING-BLOCK ASSEMBLY

Parts—	Weight (lbs.)	Average combined weights (tons)
Traveling block	*3,500-14,700	3.0 (min.)
Hooks	2,600- 4,500	8.0 (max.)
Elevator links (set)	150- 900	
Elevators	150- 600	

*Including hook.

Drill collars add 3.6 to 17.4 ton-miles per round-trip.

Bits, reamers, etc., add 2 to 4 ton-miles per round-trip.

Drill stem, swivel, hose, add 5 to 15 ton-miles per hole.

Drill-stem movements add 23 to 237 ton-miles per hole.

Traveling-block assembly 3 to 8 tons.

It would seem that the buoyancy and the weight of the tool joints fairly compensate each other. These two items may, therefore, be eliminated from further consideration.

The combined effects of drill collar, bit and cutter assemblies, would add about 8.5 ton-miles per round-trip at a depth of 2,000 feet; 15 ton-miles at 7,000 feet; and 12.5 ton-miles at 10,000 feet. It is, therefore, assumed that 12 ton-miles per round-trip would be a reasonable constant to apply to all depths 2,000 feet and over.

The combined effect of drill-stem assembly and drill-stem and pipe movement add about 30 ton-miles per hole at a depth of 2,000 feet, and 285 ton-miles per hole at 12,000 feet.

Figure 2 shows ton-mile service due to drill-pipe movements at various depths. From a study of this figure it will be seen that down to 3,000 feet this factor is so small that we believe it may be disregarded. Below 3,000 feet, however, the ton-mile service increases at a fairly uniform rate—and it may be represented by taking 3½ per cent of the footage drilled and adding same to the sum of wire-rope service. This item has, therefore, been provided for in the proposed "service record" form.

The wide range of traveling-block assemblies now being used, and the corresponding effect on ton-mile service, would point to the necessity of changing the value of this factor to 5 tons in formula (1).

The service chart (Figure 4) is, therefore, based on the following revised formula:

$$\text{T.M. per round-trip} = \frac{wL(1+L) + 4LM}{5{,}280 \times 2{,}000} + 12 \quad (1\text{-A})$$

where

$$M = 10{,}000 \text{ lb.}$$

A recommended form for assembling the necessary field and office data is also given herein (Figure 1). This form is primarily intended for office use. It may be used equally well in the field, provided the individual operator has facilities for handling it. However, it has been our experience that, as a rule, clerical work of any nature is not very popular with most drilling crews. It would, therefore, seem more practical to note any pertinent information on the tour log.

Retiring Drilling Lines

One of the most difficult problems in connection with drilling lines is the decision as to when the rope is to be retired. The answers to the questionnaire would indicate that the retirement of drilling line, in practically all cases, is left to the discretion of the tool pusher or driller in charge; and, evidently, the drillers and tool pushers are guided in their decision entirely by the appearance of the rope at the drum end with respect to the number of broken wires, amount of abrasion, and crushing. Obviously, the present practice permits too much latitude in the retirement of rope; and a more definite system, if at all practical, should prove beneficial, and should help to eliminate one uncertain factor from wire-rope service.

It is as essential to adopt a proper factor of safety for a new rope as it is to establish a minimum factor of safety below which it is not advisable to operate. Considering the risk involved, and conforming to initial safety factor of 5 as recommended by the American Petroleum Institute† it is believed that the minimum factor of safety in drilling lines should not be permitted to fall below 3.75. In other words, at the time a drilling line is retired it should have no more than 25 per cent of its initial rated breaking strength used up.

It is realized that in many instances, due to cold working in service, discarded drilling lines show greater breaking strength than new lines. Obviously, however, this factor is variable, and cannot be properly formulated; and considering, further, that additional strength is obtained at the expense of ductility, it is believed more practical to retire rotary-drilling lines on the basis of

†A.P.I. Standards No. 9-A: Specifications for Wire Rope.

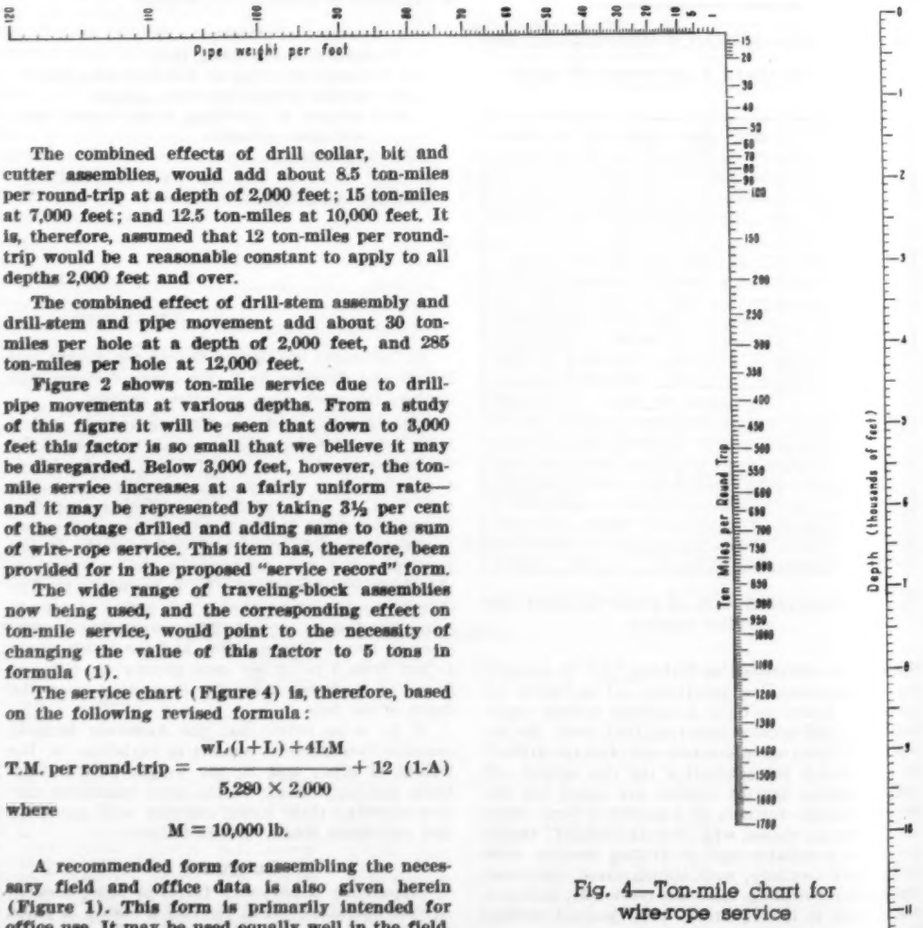
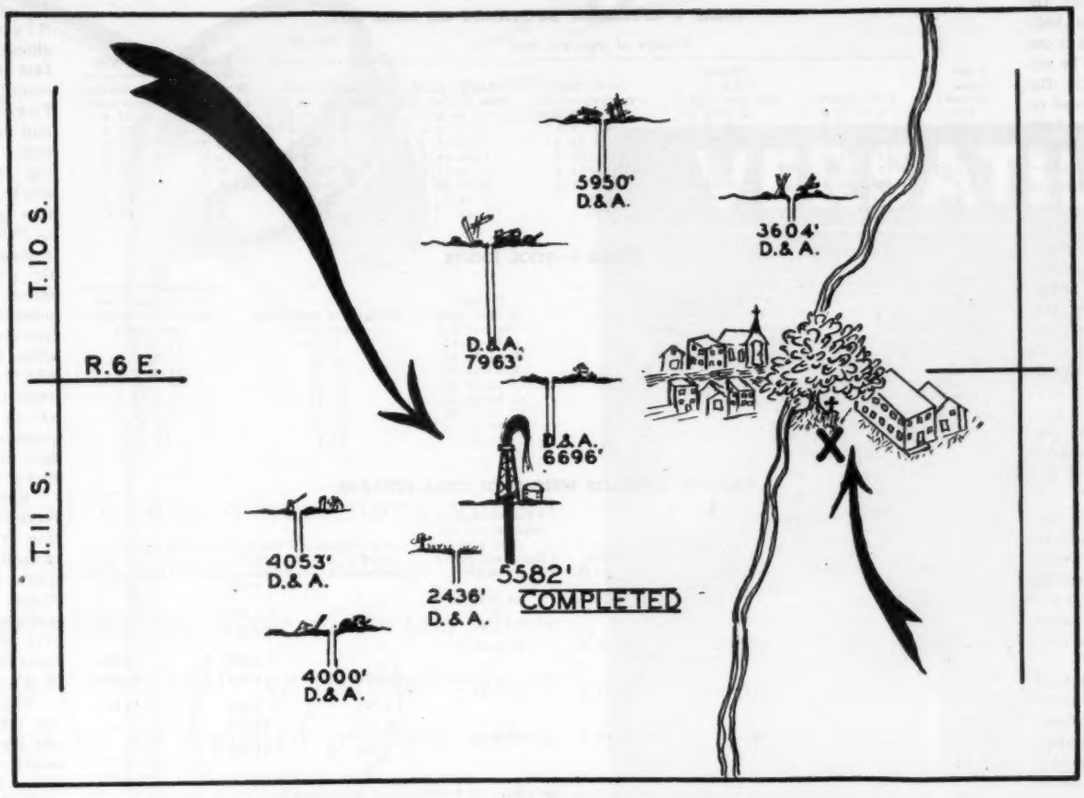


Fig. 4—Ton-mile chart for wire-rope service



X

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For dope on the Tide Water Oil Company's No. 1 Smedes well, brought in (after six or more dry holes drilled during the past ten years by other companies on various geophysical pictures of the area) on the

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initial rated breaking strength, as provided in Figure 3.

Figure 3 indicates the relation between and the permissible combined effect of the number of broken wires per rope-lay and the total wear as represented by the average length of the worn surface on individual wires within one rope-lay. It is to be understood that this figure is predicated on broken wires being fairly evenly distributed over the six strands—and not concentrated in any one strand. This figure applies to 1-inch A.P.I. grade "J," 6x19, 1-9-9, Seale construction, regular lay, hemp-center lines only; and the values shown are based on actual tests conducted and information assembled by several wire-rope manufacturers. Similar figures could be prepared for other sizes and for other constructions.

Corrosion, as a factor in the retirement of drilling lines, is being disregarded — as corrosion cannot be properly appraised, and in most instances it can be controlled.

It is further assumed that normally all abrasion and breakage occurs in the outer wires; and that error, in measuring length of wear, due to distortion of wire will be on the side of safety.

There are a large number of dynamic forces and other indeterminate stresses created by mechanical peculiarities of equipment used that cannot be properly appraised without considerable research and expense; and, even then, it appears very doubtful whether the result will prove of practical benefit, or whether such data could be incorporated in a single formula.

From available information, the rotary-drilling lines are operating at speeds of 2,000 to 6,500 feet per minute. It is believed, however, that the recommended setting of 4,000 feet per minute as maximum speed with existing drum conditions, as contained in Paragraph A-31, Appendix "A," A.P.I. Standards No. 9-A, is still a satisfactory rule to follow.

Line Loading

It is important to note that the factor of safety of 5, as recommended in Paragraph A-32, A.P.I. Standards No. 9-A, should be applied to the fast line in which is accumulated the frictional forces of all sheaves and internal rope friction. The rated breaking strength of 1-inch grade "J," 6x19, 1-9-9 line pipe, for instance, is 73,000 pounds. With a factor of safety of 5, the permissible line stress would be 14,600 pounds—or, in a 6-inch line string-up, a permissible load capacity of 87,600 pounds. However, this load will create in excess of 16,400 pounds stress in the fast line, reducing the factor of safety to 4.45.

Retaining the safety factor of 5 in the fast line, the load-carrying capacity of the system would be reduced from 87,600 pounds to 77,600 pounds—a reduction of over 10 per cent, or the equivalent of 355 feet of 6⅝-inch pipe.

The correction factor used in securing the above figures was based on the result of research data accumulated by several wire-rope manufacturers.

Table 7 indicates permissible loads and corresponding lengths of pipe, with various numbers of lines up, retaining a factor of safety of 5.

Attaching Wire Rope to Drum

So far as wire-rope service is concerned, there has been very little, if any, difficulty experienced due to manner of attaching wire rope to the drum. The many plans outlined in the questionnaire have proved reasonably satisfactory. The prevailing

TABLE 1—EFFECT OF BUOYANCY ON DRILL PIPE

Pipe size (inches)	Weight of pipe per foot: Atmosphere	Water (62.5-lb.) (lbs. per cu.ft.)	75-lb. fluid (lbs. per cu. ft.)	100 lb. fluid (lbs. per cu. ft.)	120-lb. fluid (lbs. per cu. ft.)	Loss of pipe weight: Minimum (per cent)	Maximum (per cent)
2⅜	4.8– 6.6	4.5– 6.2	4.4– 6.1	4.3– 6.0	4.2– 5 8	6.3	12.8
2⅞	6 4–10.4	6.0– 9.7	5.9– 9.6	5.8– 9.4	5.7– 9.1	6.7	12.5
3½	8.5–13.3	8.0–12.5	7.8–12.3	7.8–12.0	7.5–11.7	5.9	12.0
4½	12 7–16.6	11.9–15 5	11.8–15.3	11.5–14.9	11.2–14.6	6.6	12.1
5 9/16	19.0–25.2	17.8–23.7	17.6–23.4	17 1–22.8	16.7–22.3	6.1	12.1
6⅝	22.2–31.9	20.8–29.9	20.5–29.5	20.0–28.7	19.5–28.1	6.3	12.1
7⅝	29.25	27.5	27	26.3	25.7	6 0	12.1
8⅝	40	37.5	37	36	35.2	6.2	12.0

TABLE 2—TOOL JOINTS

Size (inches)	Tool Joints: Weight average A.P.I. regular (pounds)	A.P.I. full-hole (pounds)	Weight of drill pipe (lbs. per ft.)	Weight of couplings (pounds)	Increase in weight of pipe per foot due to tool joints (per cent)
2⅜ x 16	23	...	4.80- 6.65	5.575	10.8- 7.7
2⅞ x 17	34	...	6 45-10.40	9.26	11.9- 7.3
3½ x 18	43	45	8.50-13.30	9 71	11.4- 7.2
4½ x 20	76	79	12.75-16.60	19.93	13.6-10.3
5 9/16 x 22	125	118	19.00-25.25	30.77	14.9-11.1
6⅝ x 24	165	160	22.20-31 90	36.58	16.8-11.7
7⅝ x 26	238	...	29.25	49.00	18.4
8⅝ x 28	324	...	40.00	70.8	18.4

TABLE 3—AVERAGE WEIGHT OF DRILL COLLARS

Drill collars: Outside diameter times inside diameter (inches)	Weight per foot (pounds)	Drill pipe: Size (inches)	Weight (lbs. per ft.)	Difference in weight per foot drill pipe and drill collar (pounds)	Additional weight due to drill collars: 60-ft. (pounds)	90-ft. (pounds)	180-ft. (pounds)
3⅛ x 2¼	25.5	2⅜-2⅞	4.8 -10.4	20.7-15.1	....	1,863 1,359	3,726 2,718
5¼ x 2 5/32	53.6	3½-4½	8.5 -16.6	45.1-37.0	....	4,059 3,330	8,118 6,660
7¾ x 5	93.6	5 9/16-6⅝	19.0 -31.9	74.6-61.7	4,476 3,702	6,714 5,553	13,428 11,106
10 x 5	200.3	7⅝-8⅝	29.25-40.0	171-160	10,260 9,600	15,390 14,400	....

2,000-ft. hole—9,600-lb. to 15,390-lb. or 3.6 to 5.7 ton-miles per round-trip.
7,000-ft. hole—3,702-lb. to 13,428-lb. or 4.9 to 17.4 ton-miles per round-trip.
10,000-ft. hole—3,330-lb. to 8,118-lb. or 6.3 to 15.2 ton-miles per round-trip.

TABLE 4—APPROXIMATE WEIGHT OF BITS, CORE BARRELS, REAMERS, ETC.

Size (inches)	Weights: Rock bits (pounds)	Fishtail bits (28 in. to 48 in. long) (pounds)	Core Barrels (20 ft. long) (pounds)	Reamers and underreamers (pounds)	Depth of hole (feet)	Average combined weight (tons)	Additional ton-miles per round-trip
2⅜- 4¾	250	40- 80	250	100- 250	10,000	0.5	1.9
5⅛- 7	400- 700	80- 225	500- 700	300- 600	.....	....	....
7½- 9⅞	700-1,200	225- 300	675-1,000	600-1,200	.....	....	....
10⅝-12¼	1,300-1,800	300- 350	1,000-1,200	600-1,800	7,000	1.5	4.0
13⅜-17	2,300-3,400	300- 500	1,200-1,500	1,800-2,000	.....	....	....
17½-27	4,000-7,000	5,000-1,000	1,900-2,000	2,500	2,000	5.0	3.8

TABLE 5—DRILL STEM, SWIVEL-AND-HOSE ASSEMBLY

Drill stem: Size (square inches)	Weight per foot (lbs.)	Drill pipe weight per foot (lbs.)	Additional weight due to drill stem, in: 38-ft. length (lbs.)	54-ft. length (lbs.)	Swivel	Hose	Average combined weight (lbs.)	Additional ton-miles per hole
2½	15.25	4 65	400	....			....	....
3	25.6	10.4	550	....			....	....
3½	30.9	13.3	670	....			....	....
4¼	44.7	16.6	1,007	1,520	2,300 lb. to 7,500 lb.	⅛ (300 lb. to 600 lb.)	6,000	10.3
5¼	69.7	25.25	1,690	2,460			....	....
6	89.7	31 90	2,200	3,120			....	....
7	123.9	29.25	3,600	5,100			12,000	15.6
8	174.9	40.9	5,120	7,300			15,000	5 25

TABLE—7 ALLOWABLE DRILL-PIPE LENGTHS

	1-inch				1⅛-inch				1¼-inch			
Line size												
Lines up	6	8	10	12	6	8	10	12	6	8	10	12
Maximum line load, lb.	77,660	99,200	119,600	137,800	95,800	122,200	147,500	170,000	120,000	153,500	185,000	213,000
Maximum drill-pipe load, lb.	47,660	69,200	89,600	107,800	65,800	92,200	117,500	140,000	90,000	123,500	155,000	183,000

Drill-pipe size and weight

(Inches)	Weight of drill pipe (pounds per feet, with couplings)	1-inch: Feet				1⅛-inch: Feet				1¼-inch: Feet			
8⅝	40	1,191	1,739	2,240	2,695	1,645	2,305	2,937	3,500	2,250	3,087	3,875	4,575
7⅝	29.25	1,629	2,365	3,063	3,685	2,249	3,152	4,017	4,786	3,076	4,222	5,299	6,256
6⅝	31.9	1,494	2,169	2,808	3,379	2,062	2,890	3,683	4,388	2,821	3,871	4,858	5,736
	25.2	1,891	2,746	3,555	4,277	2,611	3,658	4,662	5,555	3,571	4,900	6,150	7,261
	22.2	2,146	3,117	4,036	4,855	2,963	4,153	5,292	6,306	4,054	5,563	6,981	8,243
5 9/16	25.2	1,891	2,746	3,555	4,277	2,611	3,658	4,662	5,555	....	....	....	....
	22.2	2,146	3,117	4,036	4,855	2,963	4,153	5,292	6,306	....	....	....	....
	19.0	2,508	3,642	4,715	5,673	3,463	4,852	6,184	7,368	4,736	6,500	8,157	9,631
4½	16.6	2,871	4,168	5,397	6,493	3,963	5,554	7,078	8,432	5,421	7,439	9,337	11,024
	13.75	3,466	5,032	6,516	7,840	4,785	6,705	8,545	10,181	6,545	8,981	11,272	13,309
	12.75	3,738	5,427	7,027	8,454	5,160	7,231	9,215	10,980	7,058	9,686	12,156	14,352
3½	13 3	3,583	5,203	6,736	8,105	4,947	6,932	8,834	10,526	6,766	9,285	11,654	13,759
	11.2	4,255	6,178	8,000	9,625	5,875	8,232	10,491	12,500	8,035	11,026	13,839	16,339
	8.5	5,607	8,141	10,541	12,682	7,741	10,847	13,823	16,476	10,588	14,529	18,235	21,529

NOTE: Maximum load capacity of 1-inch, 1⅛-inch and 1¼-inch line with factor of safety of 5, 14,600 lb., 18,000 lb., and 22,600 lb., respectively. 10,000 lb., estimated average weight of drill collars, drill stem, and traveling-block assemblies deducted from maximum line load to obtain maximum drill-pipe loads.

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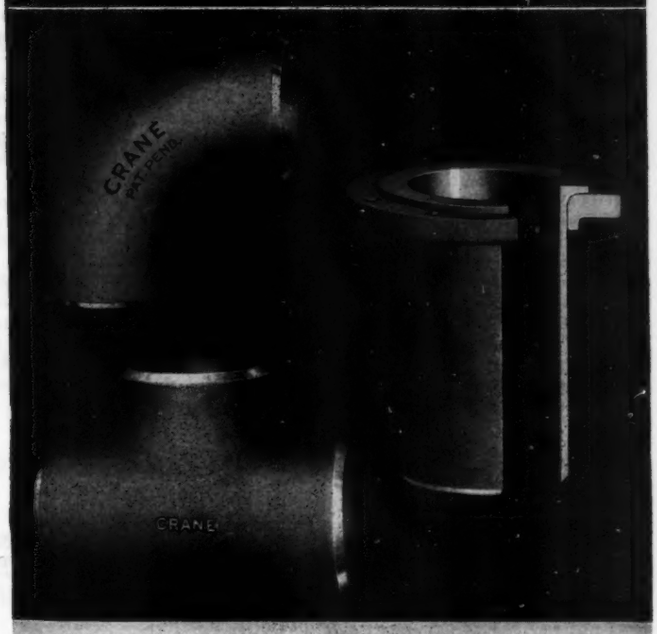

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practice of tying a knot at the end of the line does have some detrimental effect on the rope, but it is believed that any distortion thus created does not work up through the dead wraps, carried on the drum, into the live line. In most cases the line is damaged by loss of lay due to improper seizing before tying the knot, rather than the manner of securing the rope to the drum. The ideal device, it would seem, should be easy to handle, light in weight, and the least injurious to the rope. It is hoped that a more uniform and more satisfactory practice will develop from research work now being carried on by several operators and manufacturers.

Dead Rope on the Drum

The prevailing trend, as indicated in the questionnaire, is towards grooved-drum construction—the majority now in use being 25-inch diameter with pronounced tendency for 30-inch and 32-inch on new purchases.

Obviously, a minimum amount of dead rope should be carried on the drum, and it should be sufficient to develop the full strength of the line without pulling out. Experience and research have demonstrated that on 25-inch diameter, and larger, grooved drums 5 to 8 wraps of 1¼-inch (or smaller) rope at point of pickup will be adequate.

It is also apparent that nearly half of the operators answering the questionnaire are using plain-faced drums ranging in diameter from 10-inch to 24-inch. In such instances the problem is not so much of rope pulling out as it is that of proper spooling. And, under normal conditions, one complete layer and two to three wraps should be sufficient. Necessity for an additional two to three wraps arises from the fact that for smooth spooling the rope must not strike the spool flange at the point of acceleration.

Cutting Lines

It is apparent from the questionnaire that the practice of cutting lines is far from being uniform. Some do not cut lines at all; others cut 4 feet, 20 feet, 25 feet, 30 to 50 feet, 150 feet, and 300 feet at a time.

Line cuts are made either to move forward the stress point on the line where the same contacts the dead sheave, or to change the turn-back point on the rope at the hoist drum, or to eliminate the crushed or used portion of rope. The stress area at the dead sheave is usually confined to not more than 4 feet. The turn-back point on the drum may be changed by cutting or advancing forward 15 to 20 feet of rope, while general wear and fatigue conditions necessitate longer cuts. Change of stress points is usually accomplished by adding one to two wraps on the drum every few days—especially when handling heavier loads at greater depths—until several hundred feet shall have accumulated, and then the cut is made.

There is undoubtedly an economic relation between the length of drilling line and number of cuts. Stringing a new line usually requires two to four hours, and cutting a line will require about one hour. Assuming $25 per hour for rig time and 25 cents per foot for drilling line, one 2,500-foot line may be cut two to four times as against two 1,250-foot lines without cutting.

Some operators apparently reverse the drilling line end to end in order to distribute the wear and, also, to utilize the section of the line from the dead end to the dead sheave which could not otherwise be brought into active service. The available data are insufficient to prove or disprove the economic value of this practice.

The minimum lengths of drilling lines with 6, 8 and 10 lines, in 122- and 136-foot derricks, with 36-inch traveling and 46-inch crown-block sheaves and 60 feet of dead rope on the drums, are approximately as follows:

122-foot derrick:

(Lines)	(Feet)
6	1,120
8	1,340
10	1,660
12	1,870

136-foot derrick:

(Lines)	(Feet)
6	1,230
8	1,530
10	1,830
12	2,060

The selection of the proper length of drilling lines necessarily rests with individual operators. It would seem, however, that drilling lines ordered in multiples of 250 feet, as stipulated in A.P.I. specifications,† should work no hardship on wire-rope users; and the practice, if followed, should reflect an additional saving to both consumers and manufacturers.

The following lengths are apparently now being used:

(Feet)
1,200 to 1,350
1,400 to 1,500
1,700 to 1,750
2,000 to 2,250-2,500
3,000

Drum and Sheave Sizes

The rotary drums, crown- and traveling-block sheaves now in use cover a wide variety of sizes. The sheaves, in general, and the drums, in particular, are much smaller than the minimum 30-inch diameter stipulated by the Institute.

The drum and sheave sizes (in inches) now in use are summarized as follows:

Drums—10, 14, 15, 16, 18, 20, 24, 25, 30, 32.

Crown-block sheaves—20, 22, 24, 26, 27, 28, 31, 32, 34, 36, 42, 46, 48.

Traveling blocks—18, 24, 26, 30, 31, 32, 34, 36, 42, 48.

The questionnaire indicates a definite tendency toward 30-inch and 32-inch diameter grooved drums. The brake problem and limitation in the width of drum face would make it appear that not much more increase in drum diameter should, for the present at least, be expected. It is well to bear in mind that in order to derive the full benefit of

†A.P.I. Standards No. 9-A: Specifications for Wire Rope.

EXHIBIT "A"

SUMMARY OF ANSWERS TO QUESTIONNAIRE ON ROTARY-DRILLING LINES

Oil Operator.	Keep Service Records.	System Used.	Drum Size, Grooved or Plain.	Sheaves—Dia. Crown Block.	Sheaves—Dia. Traveling Block.	Dead Rope on Drum.	Cut Lines.	When Line Retired?	Line Size.	How Line Attached to Drum.	Interested in Standard Form.	Remarks and Recommendations.
1	Yes.	Anderson's modified.	28 in. grooved.	42 in.	36 in.	10 to 13 wraps at pick up. Smooth drum, 1 layer and 3 wraps.	20 ft. to 30 ft. each drilling week.	Check wear, broken wire and crushing. Reverse ends.	1 in.	Through flange, taper clamp, and "U" bolts. or Through flange loop and two clips.	Yes.	Crown-block sheaves be mounted on central pin, allowing lines to be spooled by continuous threading from crown block to travelling block to eliminate kinking.
2	Yes.	Anderson's.	20 in. plain.	24 in. to 32 in.	32 in.	6 wraps minimum.	Drillers' judgment.	Drillers' judgment.	1 in. and 1⅛ in.	Through flange, around shaft and clamp.	Yes.	
3	No.	—	14 in. plain.	24 in.	30 in.	1 layer.	Seldom. Handle light loads.	Drillers' judgment.	1 in.	Through flange and two clamps.	Yes.	
4	Yes.	Anderson's simplified.	28 in. grooved.	46 in.	36 in.	7 to 37 wraps.	Drillers' judgment. Best to cut 4 ft. from drum end every few days, also cut several hundred feet on reverse ends.	Drillers' judgment. Final diameter 0.95 in. +	1 in.	Through flange, around shaft, and "U" bolt cable clamps.	Yes.	Correlate methods used by various companies.
5	Occasional.	Anderson's simplified.	18 in. to 30 in. grooved.	36 in. to 42 in.	36 in. to 42 in.	½ to ¾ layer at pick up.	25 ft. to 50 ft. when necessary.	Drillers' judgment.	1 in. and 1⅛ in.	Through flange, taper clamp, and "U" bolts or zinc-in socket.	Yes.	Simplify calculation—provide a common yardstick. All factors can not be evaluated.
6	No.	—	23 in. grooved.	31⅛ in.	31⅛ in.	1 layer.	No.	When first strand breaks.	1 in.	Wire-rope clips.	Yes.	Anderson's formula valuable, but too complicated.
7	No.	—	25 in. grooved.	20 in. to 27 in.	30 in.	1½ layers.	30 ft. every 7 drilling days, also reverse ends.	Broken wires in strands.	1 in.	Through flange, loop, and clamp.	Yes.	—
8	Yes.	Anderson's modified.	14 in. to 32 in. new drums grooved.	36 in. and 42 in.	36 in. and 42 in.	1 layer and 3 wraps.	Seldom. Use short lines except on wildcats.	Drillers' judgment.	1 in. and 1⅛ in.	Through flange and three wire-rope clips.	Possibly.	—
9	Yes.	Anderson's.	14 in. to 15 in. plain.	24 in. old. 36 in. new.	36 in.	1 layer.	No definite practice.	Drillers' judgment.	1 in.	Through flange and two to three wire-rope clips.	Yes.	—
10	Yes.	Footage drilled.	10 in. to 18 in. plain.	20 in. to 26 in.	18 in. and 26 in.	10 wraps at pick up.	Drillers' judgment.	Drillers' judgment.	⅝ in., ⅞ in., 1 in.	Through flange, loop, and a clip.	Yes.	Shallow drilling—1,500 ft. average. Line spooler takes whip out of line. Even flow of power and prevention of spring hooks bouncing when empty will decrease wear. Use wire-line lubricator.
11	Not lately.	Ton-miles.	16 in. to 18 in. plain.	28 in. to 34 in.	36 in.	1 layer.	Seldom. Change ends.	Drillers' judgment.	1 in.	Through flange and two to three wire clips.	Yes.	—
12	Yes.	Anderson's.	24 in. plain.	36 in.	36 in.	1½ to 2 layers.	—	Drillers' judgment.	1 in.	Through flange, loop, and clamp.	Yes.	Make graphs for evaluating ton-mile for drill pipe and casings, and make same available at nominal fee.
13	Yes.	Anderson's.	20 in. plain. 30 in. grooved.	48 in.	30 in.	1 layer and 4 wraps.	One cut of 300 ft. when wickering appears.	Normally line not used for more than 2 round-trips after it develops wickering at the drum when travelling block is in raised position.	1 in., 1⅛ in., 1⅛ in.	Prefer attaching line to drum by babbit-filled socket.	Yes.	Ton-mile service decreases as average stress increases. Pooling of selected wire-line data, without disclosing the brand, might lead to correction factors and improvement in construction.
14	Yes.	Footage drilled.	28 in. grooved.	46 in.	46 in.	1 layer.	No.	When strands start breaking.	1⅛ in. (1,350 ft.)	Through flange, loop, and clamp.	No?	—
15	Occasional.	Ton-miles.	25 in. to 30 in. grooved.	36 in. and 46 in.	36 in.	½ to 1 layer.	20 ft. after every fifth trip (deep holes).	Drillers' judgment.	1 in., 1¼ in.	Through flange, loop, and clips; also through flange, taper, clamp and "U" bolts.	Yes.	—
16	Occasional.	Anderson's.	18 in. to 24 in. grooved preferred.	36 in. and 46 in.	36 in.	1¼ to 1½ layers.	Drillers' judgment.	Drillers' judgment.	1 in., 1⅛ in., (1,400 ft.)	Through flange, loop, and two clips.	Yes.	A committee determine constants, prepare graphs, and make forms available to all.
17	No.	—	32 in. grooved.	36 in.	36 in.	1 full wrap.	Do not cut.	Drillers' judgment.	1⅛ in.	Patented clamp through drum flange.	Yes.	—
18	Occasional.	Ton-miles.	20 in. plain.	42 in.	30 in.	—	50 ft. to 150 ft. every 10 days.	Drillers' judgment.	1 in., 1⅛ in.	Through flange, loop, and clip.	Yes.	—
19	Yes.	Footage drilled.	15 in. plain.	22 in.	24 in.	1 layer and 6 wraps.	Broken wires. Cut enough to change stress points on drum and sheaves.	Broken wires or line too short.	1 in.	Two clips in unison with bolt.	Yes.	—

grooving, a minimum amount of dead rope should be carried on the drum—as the guiding effect of grooving is at its minimum in the third wrap.

The prevailing crown-block-sheave diameters are 36 inches to 46 inches. The sheave diameter is limited by the water-table opening; and, therefore, for the present at least, the maximum diameter will not possibly exceed 60 inches. It is believed that one of the most detrimental factors on wire rope has been the lower-deck small-diameter sheave being used for the dead line—in most instances 26-inch diameter. Several operators have eliminated the small sheave by substituting a large sheave in the upper deck, with very beneficial results.

In so far as wire-rope service is concerned, the traveling-block sheaves need not be dealt with differently from the crown blocks—and the same limiting factors apply.

The main difficulty with practically all manganese-steel crown- and traveling-block sheaves in the past has been that, due to difficulty in machining this material, the grooves were trued up with hand-grinding equipment—resulting in sheaves being out-of-round, wabbly, and irregular. These conditions have proved highly detrimental to the line under present loading conditions and hoisting speeds.

Lubrication[1, 2a]

In general, all rotary-drilling lines at the present time are laid up with a good grade of lubricant in the core, and very little difficulty is being experienced due to lack of lubrication of internal wire.

Wire-rope service is primarily a function of metallic area; and, therefore, any practical method that will retard the abrasion on the outside wires will undoubtedly extend the life of the rope.

The mechanics of application of a lubricant is a problem for the individual operator. The important fact remains, however, that the lubricant should be of good grade, and should be applied frequently.

Summary

The Anderson T.M. formula is basically sound, and remains intact. However, the value of M in this formula has been increased to meet recent developments in heavier equipment. A constant has been added to compensate the combined effects of the weights of drill collars and cutting assemblies. A factor based on footage drilled has been provided to compensate for movements of the main string of drill pipe as the result of assembling a stand. A simplified ton-mile chart (Figure 4) as developed by H. Schnoor, of the Standard Oil Co. of California, has been further revised to conform to changes made in the formula. This form has the added advantage over the present T.M. curves in that it may be readily used for any weight of pipe at any depth, within the limits of the chart.

A chart has been provided for retiring rotary-drilling lines which, it is believed, will prove of practical value.

[a]Figures refer to bibliography.

Bibliography

[1]A. J. Moran, "Lubrication of Wire Rope," Penn. State Col. Tech. Bull. 18.
[2a]"Rules and Regulations for Metal Mines," Bur. Mines Bull. 75, Govt. Printing Office (1915).

Joins Texas University Staff

Dr. George H. Fancher, formerly chief petroleum engineer for the York Oil Corp., has accepted a professorship in the University of Texas in the department of petroleum engineering. He is a graduate of the University of Southern California, has a master's degree from the University of Maryland and a doctor's from the University of Colorado.

From 1926 to 1928 he was research fellow on an A.P.I. project in the University of Michigan. From 1928 to 1931 he taught petroleum engineering at the Colorado School of Mines, and from 1931 to September, 1934, he was assistant professor in petroleum engineering at Pennsylvania State College.

From September, 1934, to November 1, 1935, he was chief petroleum engineer of the York Oil Corp., with headquarters at Caney, Kans.

Recently he has specialized in methods of increasing recovery in depleted oil fields.

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Combined Repressuring and Flowing Unit Installed in Noak Field, Texas

By GEORGE WEBER

A new compression unit recently installed in the Noak Field of the Byersville area, Williamson County, Texas, fulfills the dual purpose of flowing wells and maintaining reservoir pressure of the producing formation. The unit is incorporated in the gathering systems of the Taylor Refining Co., Taylor, Texas, which company operates 17 producing wells in the field. Designed and placed in operation last month under the supervision of D. C. Matthews, production superintendent, the system will aid in the conservation of gas and formation pressure, at the same time affording more economical oil production.

In many phases, the Noak Field shows a marked lack of uniformity. Initial productions of the 21 wells in the field varied from 25 to 2,200 bbls. per day. Well depths in the shallow serpentine plug range from 750 feet to 940 feet. The wide difference in the initials of wells illustrated in the accompanying table is explained by the variations in porosity of the serpentine throughout the area. At some points the formation is very tight and in others porosity runs as high as 40 per cent. Pay thickness also differs; from 2 feet in one edge well to a maximum to 70 feet in others. These factors together with the diverse gas-oil ratios at which the wells produce, add to the problems of repressuring the field.

INITIAL PRODUCTION OF LARGEST NOAK WELLS

Well:	Bbls. per day
1-B Sladek	800
2-B Sladek	600
3-B Sladek	2200
4-B Sladek	120
5-B Sladek	100
5-A Sladek	1350

At the present time, the average production of the company's wells in the field is 400 bbls. per day. The two largest wells, Sladek Nos. 3-B and 5-A have been shut in for the past three months as a conservation measure. These wells when opened spray oil accompanied by large volumes of gas. Under the new method of production they are being reopened and the gas recycled back into the formation in a closed system, thus eliminating the drain on this vital factor of oil production.

When first brought in, wells of the field built up to pressure of 300 pounds on the casinghead while flowing with one-eighth-inch chokes. Pressures have since declined to 40 or 50 pounds on the traps of jetting wells. Other producers flow in heads with less pressure, and still others require pumping.

Exact measurement of gas flow and determination of the gas-oil ratio on the wells of the field have not been recently made. The production is estimated at a maximum of 300,000 feet per day. This gas which is fairly wet, averages 2 gallons of 18 pounds natural gasoline per 1,000 feet. The 40 gravity crude oil produced has a very high paraffin content. Collection of this paraffin in the tubing during flow necessitates frequent cleaning of many wells with consequent expense and loss of production. Future plans call for utilization of the natural gasoline produced by compression and cooling of the gas, for combatting this condition. The liquid will be recycled through the plugged wells, dissolving and loosening the paraffin.

Seventeen wells are served by the company's gathering system in the field, and allowance is made for connecting two or three additional ones yet to be drilled. Each well is tied into a separator in the conventional manner and two tank batteries receive the production.

Combining in one unit equipment that permits flowing wells and at the same time repressuring the producing sands, Taylor Refining Co. recently placed in operation such a plant on its properties in the Noak field of Williamson County in Texas.

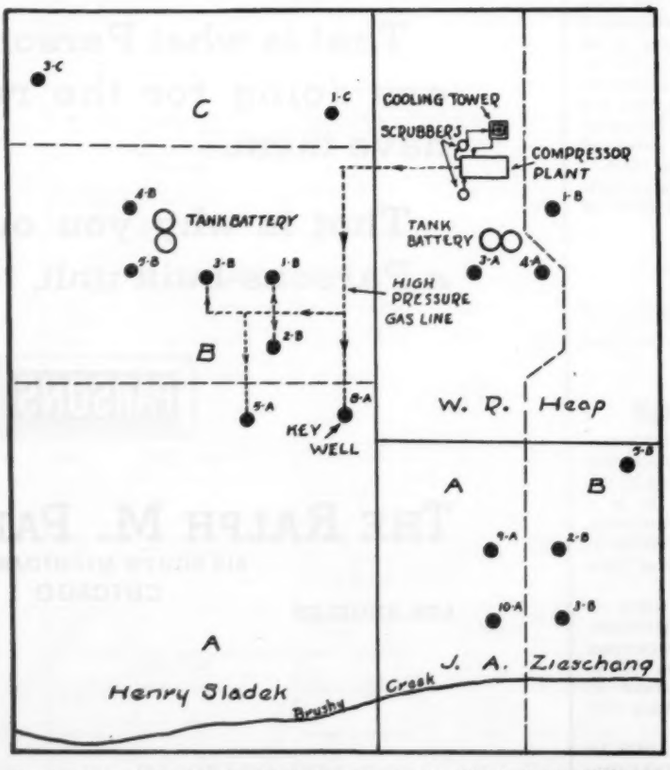
The gas gathering lines from separators converge at the compressor plant. This unit comprises one 125 horsepower Clark, two-stage compressor powered by gas. Facilities for intercooling between the low and high stages are provided by a Pritchard cooling tower equipped with Grisham and Russell bent tube sections. Two scrubbers, one on the intake line to the compressor low stage and the other between the cooling tower and high stage compression remove all traces of liquid from the gas. On the intake scrubber an increasingly popular type of safety device is employed. In addition to the automatic liquid discharge control, a mercoid switch capable of grounding out the ignition on the compressor is mounted on the scrubber and actuated by a float within. In event of the failure of liquid discharge or overcharge of oil to the scrubber, this switch shuts the compressor down before the oil level has reached the danger point. The obvious safety advantage of ignition control lies in instant action and elimination of fire hazard.

Gas leaving the second stage of the compressor is charged directly to the high pressure field line without further cooling. This line connects to four flowing wells and the key or intake well, Sladek 8-A. Relative locations of these wells are shown in the figure. While the repressuring plan in this case does not conform to the usual five-point method, the key well is chosen in a central location with respect to the company wells as a whole, and its position favors the largest producers of the field.

Drilling practices in this field call for 17-pound, 6⅝-inch casing cemented in the hole. Production is through 2 and 2½-inch tubing. In flowing the four wells the high pressure line will be connected to the tubing at the well head and the oil produced through the annular space between the tubing and casing. This method has been found the more desirable, requiring the least amount of gas per barrel of oil recovered. The bulk of the gas from the compressor will return to the formation directly, since continuous gas supply to the flowing wells is unnecessary in most cases. Occasional charges suffice to "kick off" the wells to normal production. The gas charged to these four wells is, of course, held in the closed system on returning to the surface. Theoretically the only drain on the reserve is in the natural gasoline extracted during compression and cooling, and that gas used to power the compressor.

The lack of accurate data concerning the gas oil ratio on the wells, and actual gas production of the field, coupled with the general inconsistency of many operating factors will necessitate some trial and error procedure in arriving at the ultimate state of best efficency of this repressuring program. The compressor unit, having a capacity of 500,000 feet per day is capable of handling all the gas which the field will conceivably produce. Pressure on the key well head will approximate 300 pounds. As the production of natural gasoline at the intermediate pressure stage is of secondary importance in the project, its quality and quantity will be dependent on the temperatures and pressures maintained in the system for most efficient oil production.

The compressor unit is housed in a steel frame all metal building with concrete floors throughout. In addition to the repressuring unit, a Delco light plant has been installed in the field furnishing light for outdoor floods and all lease buildings, and power for a rotary electric pump which will furnish water for the cooling tower.



Production of the Taylor Refining Co. in the Noak field, Williamson County, Texas, showing location of repressuring unit, and gas pressure lines to key well and four other wells being flowed

PROBLEMS FROM READERS

Edited by T. F. Smiley

Estimates of Petroleum Reserves in the United States Vary Widely

I would appreciate it very much if you would answer the following questions: What is considered the most reliable report on the estimated quantity of unproduced oil in the United States? How long would it run the United States under present conditions? Does any person have the right to buy or lease land in Alaska with the prospect of producing oil in the future? Has any company drilled and capped oil wells for the government or for themselves, as has been rumored? Such information as you can give me will be appreciated by me and by the people of Alaska.—B. B.

There are many estimates upon oil reserves in this country, but one placed in the records of the Cole investigating committee in Washington, D. C., last year is perhaps as good as any. It places the oil reserves at 13,600,000,000 barrels, but adds that it will require from 25 to 30 years to recover the oil. The important thing therefore is the point at which the demand for oil in the country will exceed the ability of the wells to produce it. It must be taken into consideration in this connection that the estimates of different petroleum geologists as to the quantity of unproduced petroleum vary widely and that the estimates of any individual geologist are likely to change from year to year as new information is acquired by research and exploration.

The critical rate of production (actual productive capacity) of the country's wells and the daily demand for runs to stills are running fairly close together. This does not mean that we cannot produce for a time much more than the 2,750,000 bbls. of crude now required daily, but if this course were followed it would take longer to recover the remainder of the oil, for all wells would rapidly be reduced to the stripper class, producing say one-half barrel to 5 bbls. a day. As there are only 320,000 wells, it is clear they could not meet the daily demand.

New production has not been found in sufficient volume to meet the rate at which oil has been used in the past 4 years. You cannot continue indefinitely to take things out of a barrel unless something is put into it.

As for Alaskan oil leases, it is suggested that you go to the office of the General Land Department in the nearest town and ask about oil leasing in Alaska.

Of course companies have drilled and capped oil wells. But what does it signify? Simply that pipe line connections were not available in most instances. Years ago, when oil was bought and sold upon the exchange in the east, it might have been that operators tried to get on the inside on the market, but such practices were abandoned long ago. All wells are scouted regularly now and the public knows almost as much about them as the owners in most instances. What you refer to is an old myth and might as well be forgotten as applied to the modern oil business.

Oil tariffs are variable and this department does not have printed schedules. They are regulated by the Interstate Commerce Commission and the railroads and pipe lines publish them.

If the people of Alaska are interested in the oil business, it would be well for them to remember that the United States government maintains in Alaska agencies which can furnish all the information desired. Look up your local land office, explain what you want to know and get the officials to supply such information as they do not have now. Prospecting has been done in Alaska under the guidance of the United States Bureau of Mines and U. S. Geological Survey and their reports are available.

Readers are invited to send questions relating to drilling, producing and transporting operations. These questions will be referred to persons capable of answering authoritatively. The names of those writing for information will be held confidential, initials only being published. This department cannot undertake to answer questions involving royalty or other investments, patents or intricate formulas or questions which should be submitted to consulting engineers, geologists or lawyers.

Quantity of Water Required to Cool an Internal Combustion Engine

I want to find out the proper way of determining the quantity of water needed for cooling an internal combustion engine. Can you give me the information?—E. T. D.

To determine approximately the quantity of cooling water needed for an internal combustion engine, divide 480 by the difference in temperature between inlet and outlet water and the result will be expressed as gallons of water required per horsepower hour for the engine. For example:

Outlet temperature	150 deg.
Inlet temperature	90 deg.
	60 deg.

$$\frac{480}{60} = 8 \text{ gallons per horsepower hour.}$$

WHY THEY CALLED IT *Core-Drill*

The core-drill (so-called because it cuts out cylindrical pieces of underground formations penetrated) is not modern. Read this description of a "new process of boring" published by Dr. Henri Erni in 1865: "The principle is that of cutting out a hole instead of pounding it. The drill is circular and hollow, being a thin tube, set at its lower edge with Brazilian diamonds. It is connected to cogwheels attached by cranks and rods to the walking-beam of the engine. The surface of the upper rock being cleared, the drill sits on it and revolves with great rapidity, cutting its way down at a rate astonishing to old well borers and leaving a central core standing. A clamp grips the core and jerks it up in the form of a perfectly smooth cylinder."

Lubricants for a High-Speed Diesel Should Be Chosen With Caution

It is quite plain that the lubricant for a high-speed diesel engine should have qualities that are not demanded by a good deal of other machinery. I am interested in this subject and I would appreciate such suggestions as you might be able to give concerning the selection of a proper lubricant for a high-speed diesel.—E. T. N.

The high-speed diesel has made fast progress in the last few years. Its wider use in the oil industry and other fields has led refiners to make a special study of its lubrication needs. This department is indebted to W. W. G. Godron, of the Socony-Vacuum Oil Co., for the following discussion of the subject in response to your request:

In considering the high-speed diesel engine it must be appreciated that high crankcase temperature is one of the most potent factors in the oxidation of lubricating oil.

Complete combustion of fuel is far easier of attainment in the moderate-speed unit than in the high-speed by reason of the time factor. An engine operating at 250 r.p.m., for example, has about one-eighth of a second to inject, ignite, burn the fuel, and expand the gases of combustion; whereas an engine of 1,000 r.p.m. must go through this cycle in one quarter the time, or one-thirty-second of a second. Incomplete combustion, especially in the high-speed units, places a severe burden on the lubrication oil, due to greater contamination.

The high-speed engine naturally has a high horsepower output for its cylinder size. Add to this a small oil capacity (about five gallons for an engine of 100 horsepower), a hot crankcase (sometimes 200° F. or more), inadequate oil-cooler capacity, fine atomization of oil from the rapidly revolving crank into the hot crankcase air and mediocre oil clarification, and it will be appreciated why oils once excellent diesel-engine lubricants may be inadequate for this group.

Operating troubles resulting from combustion difficulties and lubricating oil failures are so interrelated that it is difficult to isolate them. However, if a lubricating oil resists to the maximum degree any change in character during operation, then the user is assured of minimum trouble in the form of excessive sludge in the crankcase and stuck piston rings and valves, insofar as the lubricating oil can be a contributing cause.

All the high-speed automotive diesels and many stationary engines are designed to use the same oil for cylinder and bearing lubrication, the cylinders receiving their supply by oil thrown from the revolving cranks.

Knowing that only thin films of lubricating oil stand between efficient operation and serious failure, it becomes of the greatest importance that oils for diesel circulation systems should satisfy the most severe requirements in order to assure reliable operations. They should possess, in addition to qualities specified for power cylinder oils:

a. High chemical stability: A valuable characteristic, by which certain oils resist the destructive influence of continued circulation with solid and liquid impurities, and of agitation in the presence of air. This characteristic largely determines the durability of an oil, and can be attained only in high-quality oils especially refined.

b. Ability to separate readily from solid impurities and water: It is this property which guards against the formation of sludge and emulsions, and which protects bearings from the inevitable destruction that occurs when such impurities clog the oil pipes and shut off the oil supply.

c. Correct body and fluidity by which is assured the maintenance of effective lubricating oil films under the most severe operating conditions.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Relative Values Cetene Heptane and Compression Units

It would be an invaluable help if you would furnish information about a conversion table for changing C. F. R. Motor method octane numbers to comparable critical compression ratios of the Waukesha Diesel conversion motor, thus to cetene numbers.—P. J. S.

Octane numbers refer to antiknock ratings of motor fuels, while cetene numbers are used to indicate the ignition characteristics of fuel oils. A 70 octane number gasoline is one that matches in knock performance a prepared mixture containing 70 per cent iso-octane and 30 per cent normal heptane, when tested in a specified motor under standardized conditions.

The cetene number of a fuel oil may be found by running the oil in a modified C.F.R. engine and then comparing the ignition quality with that of a prepared mixture containing cetene and mesitylene. The cetene number being the percentage of cetene in the blend which has the same ignition quality as the oil under test. Cetene ignites easily under diesel engine conditions, mesitylene not at all so mixtures of the two may be prepared to duplicate the ignition quality of any oil.

The critical compression ratio of a fuel oil must be determined by means of a modified C.F.R. engine. It is found by adjusting the engine to 600 r.p.m. and noting the compression ratio at which firing occurs within three seconds after the fuel has been injected.

This introduction will serve to make clear an abstract or part of the paper by G. C. Wilson on the subject. A table is shown, partially reproduced here, which shows the relation between the several units that have been proposed as standards for indicating ignition ratings of diesel oils.

APPROXIMATE CONVERSIONS FOR DIESEL FUEL IGNITION RATINGS

Cetene No.	Crit. comp. ratio	Diesel index	Heptane No.
20	12.0	..	33
25	11.0	11	41
40	10.0	18	56
45	9.1	27	85
50	8.5	35	100
55	8.2	42	..
60	7.9	46	..
65	7.7	53	..
70	7.6	56	..
75	7.4	59	..

The per cent of heptane blended with octane to match the unknown oil has been suggested as a unit for rating ignition quality, but this has no relation to an octane number as found for a motor fuel.

The diesel index may be calculated from aniline point and A.P.I. gravity. It is the product of the two divided by 100.

References: G. C. Wilson, Fuel Specifications for High-Speed Diesel Engines; Amer. Pet. Inst. fifth mid-year meeting, Tulsa, May 15, 1933; Boerlage and Broeze, S.A.E. Jour., 31, Sec. 1, 282, 1932.

Fuel Efficiencies of Refineries and Heat for Refining Oil

How much heat is required to refine the average barrel of oil in the refineries, and is there much variation in the fuel efficiency of the refineries in the different sections of the United States? What kind of fuel is the most used? —K. A. P.

According to G. R. Hopkins, U. S. Bureau of Mines, the average quantity of heat needed to refine a barrel of crude oil in 1934 was 638,000 B.t.u., or about as much heat energy as contained in 5 gallons of fuel oil. Although the total heat utilized in 1934 was slightly above 1933, crude runs to stills increased 4 per cent, hence the average requirement per barrel declined from 660,000 B.t.u. in 1933 to 638,000 B.t.u. in 1934. The average for 1934 constitutes a new record for firing efficiency, being just under the previous low of 1929.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit problems to Dr. C. K. Francis. Questions should give as much detail as possible. Inquiries must be signed but only the given initials will be printed. The source of questions is considered confidential. Questions requiring discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered in these columns.

FUELS FOR REFINERIES, UNITED STATES, 1934

		Total heat per cent
Oil, bbls.	23,163,000	34.8
Acid sludge, bbls.	4,702,000	3.7
Coal, tons	1,189,000	5.4
Natural gas, cu. ft.	79,695,000,000	14.7
Refinery gas, cu. ft.	164,741,000,000	40.4
Petroleum coke, tons	194,000	1.0

The data suggest that the gas collected in the refineries from stills, etc., forms the highest percentage of the fuel units required.

There is a large variation in the fuel efficiencies of the refineries, when grouped by districts, as expressed in B.t.u. needed.

HEAT REQUIRED FOR REFINING A BARREL OF OIL

District—	Total B.t.u./bbl.
Atlantic Coast	677,000
Appalachian	1,158,000
Indiana, Illinois, Kentucky	691,000
Oklahoma, Kansas, Missouri	748,000
Texas inland	583,000
Texas coast	614,000
Louisiana coast	358,000
Arkansas and Louisiana (inland)	608,000
Rocky Mountain	916,000
California	464,000

Heat consumption at refineries depends on many factors, of which the trends in yields of gasoline and lubricating oils are probably most important. The yield of gasoline is indicative of activity at cracking plants, which type of plant utilizes more than the average amount of heat per gallon of product. The yield of lubricating oils is indicative of the extent to which crude oil is refined; that is, it takes considerably more heat to refine a barrel of crude through lubricating oils than it does to separate only gasoline and kerosene. The yield of gasoline decreased from 43.7 per cent in 1933 to 43.4 per cent in 1934; on the other hand, the yield of gas oil and fuel oil increased. Although the yield of lubricating oils increased slightly in 1934 the theoretical increase in fuel requirements probably was offset by technical improvements, such as solvent refining.

Reference: This information has been arranged from U. S. Bureau of Mines, R. I. 3,281, 1935, by G. R. Hopkins, Survey of Fuel Consumption at Refineries in 1934.

Water in Natural Gas at Various Temperatures and Pressures

Will you kindly give me a table showing the percentage of water vapor held in natural gas when saturated under varying conditions of pressure and temperature?—C. S.

The quantity of water vapor contained in natural gas under different conditions of temperature and pressure is given in the table.

PERCENTAGE BY VOLUME OF WATER VAPOR IN SATURATED GAS

Temp. °F.		Gauge pressure 1 lb.	5 lb.	10 lb.	25 lb.	50 lb.	100 lb.	250 lb.	500 lb.
32	0.59	0.56	0.45	0.36	0.22	0.14	0.08	0.03	0.02
40	.81	.78	.62	.49	.31	.19	.11	.05	.02
50	1.19	1.13	.90	.72	.45	.28	.16	.07	.03
60	1.71	1.63	1.30	1.04	.65	.40	.22	.10	.05
70	2.54	2.31	1.84	1.47	.91	.56	.32	.14	.07
80	3.39	3.24	2.58	2.06	1.28	.78	.44	.18	.10
90	4.78	4.45	3.55	2.83	1.76	1.08	.61	.26	.14
100	6.35	6.05	4.82	3.84	2.39	1.47	.83	.36	.18
110	8.53	8.12	6.47	5.05	3.21	1.97	1.11	.47	.25
120	11.32	10.78	8.59	6.85	4.27	2.62	1.48	.64	.33

Natural gas, of course, contains some water vapor but less than that corresponding to saturation. Its power to absorb water vapor is related to the quantity of water vapor contained, but the total weight that can be held is the same as for a dry gas. The table may be used to determine the weight of water vapor that will be absorbed by the gas after it enters the distribution system. For instance, at 250 pounds pressure and 60° F., saturated natural gas will contain 0.10 per cent of water, while if expanded to 7-inch pressure at 70° F. it will contain this same percentage though capable of holding 2.54 per cent; it thus possesses

a relative humidity of $\frac{0.10}{2.54} \times 100 = 3.9$ per cent

and every cubic foot can absorb $\frac{2.54 - 0.10}{100} =$ .0244 cubic foot of water vapor, which under the given conditions amounts to 0.0012 pound.

Reference: Conditioning of Natural Gas, Gas Service Journal, 5, 7, 1931.

Smoke Point of Kerosene and Method for Making Test

What is meant by the smoke point of kerosene and how is it determined?—L. C. M.

The smoke point of kerosene is defined by the Institution of Petroleum Technologists as the maximum height of the flame obtainable from a kerosene without smoking when a sample is burned under specified conditions.

The test is designated I.P.T. K-36-1933. A special lamp and wick are provided together with a scale, graduated in mm., for measuring the height of the flame. The lamp is placed in a vertical position completely protected from drafts. Ten ml. of the filtered oil is put in the dry oil holder. A piece of wick 5 inches (min.) long is extracted with a suitable solvent, dried at 100° to 105° C., soaked in the sample and then placed in the holder. The wick holder is placed in the oil holder and screwed home.

The oil holder is held at 20° to 25° C. for 10 minutes, then inserted into the lamp and the wick lit. The wick is adjusted to give a flame of about 1 cm. high and burned for 5 minutes. Five or six determinations are then made by raising the wick until a smoky flame is produced and then lowering it until the smokey tail just disappears. The height of the flame is read at this point and the mean of the observations recorded as the smoke point.

Duplicate results should agree within 1 mm.

East and East Central Texas

TRINITY TEST COMPLETED AS A DISTILLATE AND GAS WELL

By L. E. BREDBERG

DALLAS, Tex., Nov. 18.—Tidewater Oil Co. and Texas Seaboard Oil Co.'s No. 21-A Wills, in the S. Edmondson Survey, Cayuga field, northwest Anderson County, has been completed as a distillate and high-pressure gas well and rig is being torn down, with the well shut in. Total depth was 9,083 feet, but it was plugged back to 7,416 feet before perforating the casing with 20 holes from 7,210-20 feet, 19 shots from 7,250-65 feet and 59 shots from 7,310-60 feet. A test showed it making 5,500,000 feet of gas and 125 bbls. of fluid in 24 hours on the basis of a five-hour gauge through three-eighths inch tubing choke. Casing pressure tested 1,910 pounds and tubing pressure 1,775 pounds. It was making 58 per cent distillate and 42 per cent wash water, but other tests showed the distillate increasing with water decreasing, making 170 bbls. of fluid in 24 hours with casing pressure 1,650 pounds, tubing pressure 1,350 pounds and 6,800,000 feet of gas. The distillate is nearly 56 degrees. Some say it is the Glen Rose, upper section of the Trinity sand series, while others say it is coming from the Paluxy and Travis Peak sections of that formation. Elevation is 308 feet and top of the Georgetown lime was logged at 4,650 feet. It is the deepest test drilled in East Texas and the first to produce from the Trinity.

There are 80 producing wells in the Cayuga field. Their October yield was 112,000 bbls. A number of the wells are only gas producers. The three oil producers in the Long Lake field, southwest Anderson County, produced 6,000 bbls. of oil during October, and eight producers in the Camp Hill pool, eastern Anderson County, owned by Gulf Production Co., produced 18,500 bbls. from three different sand horizons, one from the Carrizo and the others from the Sub-Clarksville and Woodbine sands.

Wildcat Locations, Completions

There were two wildcat locations staked during the week. American Liberty Oil Co. and Pioneer Exploration Co. have location on the Doctor Wilson 85-acre tract in the S. Donegan Survey, near Huntington in Angelina County, and Schaffer Co. has made tentative location about 5 miles west of the Lee-Tex Oil Co.'s small discovery on the Guissler farm in the J. J. Andselmo Survey, about 1,000 feet northeast of a dry hole. Three more tests may be drilled around the Guissler discovery if it is made a commercial producer. Another operator has taken over the well and is working it over.

A San Antonio operator will drill a Woodbine sand test on the Gulf Production Co.'s Mount Selman block in Cherokee County. Roger Wolfe, who drilled the Rusk discovery for Wood and others on the New Birmingham Development Co.'s lands, 6 miles southwest of Rusk, has the contract.

A test may be drilled 2 miles east of the Rusk discovery in Cherokee County, on the S. W. Long tract in the R. Linnard Survey.

Clark and Cowden have a block of approximately 4,500 acres 10 miles north of Fairfield, in Freestone County, and are to start a test by February 1. The block falls in the Wolt, Dubronner and adjacent surveys.

Riddlesbarger and McDougal have a block of 2,500 acres in the T. N. Jones, Dabney, McCain, Thompson and Honeycut Surveys, 6 or 7 miles southwest of Malakoff, Henderson County, and are to drill a Woodbine sand test.

A test is to be made in the M.E.P. R.R. Co. Survey on a block of between 5,000 and 6,000 acres, 7 miles northeast of Blossom in Lamar County. George Greer and associates hold title to the leases. C. W. Davey and others also have a block in this county which is to be core tested before a Trinity sand test. The block consists of around 6,800 acres and is 3 miles south of Reno.

A block of 6,800 acres is being taken in the southwestern part of Titus County for a test to be spudded within 90 days. The block centers in the Joseph Reed Survey and extends into Camp and Franklin Counties.

A block of 6,000 acres is being taken near Campbell in Hunt County, and will probably be drilled in the near future.

The dry holes reported in wildcat areas fell in Camp, Cass and Harrison Counties. A gas well only was completed by Kirby Petroleum Co. on its Litchfield lease in the Clendennen Survey, over the county line from the main part of the Cayuga field, and in Henderson County. This well may prove the northeast limit of the field although oil wells are found surrounding gas wells in many parts of it, the sand yielding only gas in some, as in this extension and edge test.

E. R. Smith and others abandoned a dry hole on the J. M. Jordan lands in the E. B. Allen Survey, 1 mile south of Newsome in Camp County. Total depth was 4,350 feet. Elevation is 438 feet.

Red River Showing

Don F. Cleary's No. 1 C. S. Mowery, J. Bowerman Survey, 10 miles north of Clarksville in Red River County, is standing with 400 feet of fluid in the hole, the top oil. The hole is to be bailed and a test made of the sand cored from 1,130-50 feet. Total depth is 1,144 feet.

East Texas Field

Agey and others' No. 1 McWilliams, about 4,000 feet east of production on the south end of the East Texas field, in Rusk County, logged 2 feet of sand from 3,549-51 feet, drilled a shale break and went into more sand from 3,553-56 feet. It was shut down in Georgetown lime at 3,671 feet but is to be plugged back and a test made.

Marrs' No. 1 Lacy, on the southwest edge, plugged back from total depth of 3,656 feet to 3,654 feet to test a small showing of oil. A small pumper may be realized.

There were 56 tests completed in the field this week, dry holes showing up oftener on the edges. One dry hole was abandoned in Gregg, one in Rusk and two in Upshur County. Five pumpers and two swabbers were completed, two others flowing by heads only when completed, with gas lift used in producing another, which left only 42 flowing naturally. Sixty-four locations were staked.

EAST TEXAS FIELD COMPLETIONS

Gregg County

Arkansas Fuel's No. 7 Hestland, top sand 3,640-55 feet, total depth 3,657 feet, initial production 20 bbls. 15 minutes; No. 9 H. Stevens, top sand 3,589 feet, total depth 3,612 feet, initial production 25 bbls. 15 minutes. Atlantic's No. 68 Hays, top sand 3,513 feet, total depth 3,558 feet, initial production 134 bbls. hour, 2-inch tubing. C. G. Dunham's No. 2 J. T. Jeter, top sand 3,590 feet, total depth 3,591 feet, initial production 20 bbls. 15 minutes.

Holloway-Ward's No. 1 Guy Sterling, no top sand, Georgetown lime 3,600 feet, total depth 3,674 feet, sandy lime, dry and abandoned. Mid-Field Oil Co.'s No. 1 T.&P.R.R., top sand 3,587 feet, total depth 3,589 feet, initial production 35 bbls. hour. Shell Petroleum's No. 34 J. Moore, top sand 3,526 feet, total depth 3,562 feet, initial production 80 bbls. hour. Simms-Stanolind's No. 35-B Flewellen, top sand 3,660 feet, total depth 3,692 feet, initial production 15 bbls. 10 minutes. Stanolind Oil & Gas' No. 37-B McKinley, top sand 3,573 feet, total depth 3,606 feet, initial production 4 bbls. 15 minutes.

Sun Oil Co.'s No. 14 J. Campbell, top sand 3,472 feet, total depth 3,532 feet, initial production 65 bbls. hour. Texas Co.'s No. 13 E. M. Wood, top sand 3,619 feet, total depth 3,620 feet, initial production 25 bbls. hour. Arkansas Fuel's No. 27 Hughey-Ross, top sand 3,524 feet, total depth 3,550 feet, initial production 21 bbls. 15 minutes. C. C. Crews' No. 2 fee, top sand 3,671 feet, total depth 3,676 feet, initial production 20 bbls. hour, 2-inch tubing.

Magnolia Petroleum Co.'s No. 8 H. P. Hale, top sand 3,536 feet, total depth 3,555 feet, initial production pumping 20 bbls. four hours. Sinclair Prairie's No. 55 King Trustee No. 1, top sand 3,466-89 feet, total depth 3,503 feet, initial production 25 bbls. 25 minutes; No. 56 King, top sand 3,460-89 feet, total depth 3,509 feet, shale, initial production 29 bbls. 20 minutes. Tide Water's No. 27 Bivens, top sand 3,645 feet, total depth 3,651 feet, initial production 12 bbls. 10 minutes. U-Tex's No. 8 M. T. Cole, location abandoned.

Rusk County

Humble Oil & Refining Co.'s No. 38 J. N. Peterson, top sand 3,695 feet, total depth 3,682 feet, initial production 85 bbls. hour; No. C-10 H. Sexton, top sand 3,741 feet, total depth 3,751 feet, initial production 68 bbls. hour. Hurricane Oil Co.'s No. 4 Alexander, top sand 3,642 feet, total depth 3,658 feet, initial production 20 bbls. 30 minutes. Hurtle Oil Co.'s No. 3 Dickerson, top sand 3,515 feet, total depth 3,535 feet, initial production swabbing 20 bbls. hour.

Meco Oil Production's No. 6 T. Williams, top sand 3,687 feet, total depth 3,688 feet, initial production 15 bbls. hour. Southern-Thrumond's No. 5 A. A. King, top sand 3,732 feet, total depth 3,733 feet, initial production 115 bbls. hour. Stewart Oil Co.'s No. 5 M. Holt, top sand 3,525 feet, total depth 3,561 feet, shale, initial production estimated 5 bbls. hour, 2-inch tubing, by heads. Stewart Holdings' No. 1 M. Holt, top sand 3,549 feet, total depth 3,574 feet, shale, initial production 10 bbls. hour, 2-inch tubing, by heads.

Aston Oil Co.'s No. 9 J. R. Alford, top sand 3,624 feet, total depth 3,676 feet, initial production 20 bbls. 10 minutes. A. P. Carey's No. 2 Hale, top sand 3,541 feet, total depth 3,588 feet, initial production swabbing 17 bbls. hour. Champlin-Bass' No. 6 R. G. Mason, top sand 3,610 feet, total depth 3,630 feet, initial production 20 bbls. 15 minutes. Gant-Garvin-Weggner's No. 31 Moore, top sand 3,548 feet, total depth 3,600 feet, initial production 12 bbls. hour.

Humble Oil & Refining's No. 10 G. Alexander, top sand 3,691-94 feet, top Georgetown lime 3,779 feet, total depth 3,784 feet, lime, dry and abandoned; No. 32 J. W. Turner, top sand 3,722 feet, total depth 3,788 feet, initial production 60 bbls. hour; No. 34 J. W. Turner, top sand 3,610 feet, total depth 3,705 feet, shale, initial production 10 bbls. hour, gas lift. Hunt Production Co.'s No. 26-C Fair, top sand 3,613 feet, total depth 3,624 feet, initial production 31 bbls. 15 minutes. J. Powell and J. J. Jenkins' No. 1 T. C. Gilstrap, top sand 3,542 feet, total depth 3,620 feet, shale, initial production pumping 6 bbls. hour.

Mabee, Consolidated's No. 1-C Maxwell, top sand 3,605 feet, total depth 3,680 feet, shale, initial production pumping 75 bbls. daily; No. 2-D J. P. Maxwell, top sand 3,631 feet, total depth 3,708 feet, initial production

pumping 35 bbls. daily. Marathon Oil Co.'s No. 27 H. C. Burton, top sand 3,682 feet, total depth 3,718 feet, initial production 32 bbls. hour; No. 18 C. L. Graham, top sand 3,629 feet, total depth 3,655 feet, initial production 88 bbls. hour; No. 78 Cross, top sand 3,629 feet, total depth 3,639 feet, initial production 65 bbls. hour.

Retsal Drilling Co.'s No. 1 Maxwell, top sand 3,578-3,610 feet, total depth 3,645 feet, shale, initial production pumping 50 bbls. daily. Sneed and others' No. 3 Gossett, top sand 3,673 feet, total depth 3,675 feet, initial production 50 bbls. hour. Tide Water's No. 13 Shaw, top sand 3,690 feet, total depth 3,760 feet, initial production 35 bbls. 30 minutes. R. H. Vise and others' No. 9 W. O. Alford, top sand 3,808 feet, total depth 3,809 feet, initial production 75 bbls. hour.

Smith County

Arcadia Refining Co.'s No. 4 J. B. Wilson, top sand 3,754 feet, total depth 3,750 feet, initial production 20 bbls. 50 minutes, three-quarters-inch choke. Genroe Drilling Co.'s No. 5 J. C. Bateman, top sand 3,810 feet, total depth 3,811 feet, initial production 33 bbls. hour. Gulf Production Co.'s No. 8 W. O. Alford, top sand 3,791 feet, total depth 3,792 feet, initial production 80 bbls. hour. Sinclair Prairie's No. 59-A Mayfield, top sand 3,806 feet, total depth 3,809 feet, initial production 30 bbls. hour. Sun Oil Co.'s No. 24-B Pace, top sand 3,831 feet, total depth 3,832 feet, initial production 25 bbls. hour.

Upshur County

Ben Balter and others' No. 1 James Lee, top sand 3,718 feet, dry, total depth 3,719 feet, dry and abandoned. B. G. Barnett's No. 3 T. N. Tuttle, top sand 3,725 feet, total depth 3,727 feet, initial production 60 bbls. hour. J. C. Falvey's No. 5 B. Doby, top sand 3,772 feet, total depth 3,775 feet, initial production 10 bbls. 10 minutes, one-half-inch choke.

Humble Oil & Refining Co.'s No. 32 J. K. Edwards, top sand 3,622 feet, total depth 3,665 feet, initial production 80 bbls. hour. Lyons and others' No. 5 E. O'Byrne, top sand 3,729 feet, total depth 3,760 feet, initial production 50 bbls. hour. J. M. McMurray's No. 1 C. F. Williams, top sand 3,707 feet, total depth 3,736 feet, plugged back to 3,721 feet, dry and abandoned. Monday Oil Co.'s No. 14 J. W. Younce, top sand 3,625 feet, total depth 3,628 feet, initial production 60 bbls. hour, 2-inch tubing.

EAST TEXAS WILDCAT COMPLETIONS

Camp County

E. R. Smith and others' No. 1 J. M. Jordan, total depth 4,350 feet, water sand, top Woodbine 4,267-83 feet, salt water and abandoned.

Henderson County

Kirby Petroleum Co.'s No. 1 Litchfield, total depth 4,126 feet, plugged back to 4,064 feet, completed as a gas well, no gauge, tubing pressure 1,500 pounds.

Van Zandt County

Pure Oil Co.'s No. 1 Morris, top Woodbine 2,869 feet, total depth 2,934 feet, initial production pumping 33 bbls. daily.

Drilling in Ontario

CHATHAM, Ontario, Nov. 16.—In Chatham Township, Kent County, Ontario, Union Gas Co.'s No. 1, SW Lot 5, Concession 13, is finishing a dry hole around 2,015 feet. It will be plugged. It got two small shows of oil in the Salina around 1,620 and 1,740 feet. A second test will likely be drilled.

In the De Clute field, Kent County, Union Gas Co.'s No. 30, Lot 17, Concession 15, Raleigh Township, is below 1,540 feet with two small shows of sweet gas and one small show of sulphur gas. Near Charing Cross, in Lot 23, Concession 11, Raleigh Township, Ladd & Knight are locating a test. R. L. Pattinson and associates are cleaning out and shooting an old well farther west on the Wright farm in Concession 14, Raleigh Township.

In the Dover field, Kent County, Ontario, Ajax Oil & Gas Co.'s No. 11, Lot 2, Front Concession, Dover East Township, got the Trenton limestone at 2,903 feet and drilled 205 feet in, getting a natural flow around 100,000 feet a day. It got a small water flow 140 feet in and a heavy flow at 205 feet. It has plugged back to shut off the water and is being shot with 150 quarts. Prairie Oil & Gas Co.'s No. 3 oil well, Stephens farm, Lot 2, Front concession, is fishing for a lost bailer. E. P. Rowe's No. 1, Duphette farm, Lot 2, Concession 4, Dover East, is being put on the pump; it started with a shot production of 4,750,000 feet a day but has turned to oil.

In the Haldimand-Norfolk area, a Toronto syndicate drilling on the Robert Dosser farm near Jarvis got a fair oil show with considerable gas in the shallow gas horizon, the first oil encountered in this portion of the field, and looks like a small pumper. Tillsonburg Oil & Gas Co., incorporated recently at Tillsonburg, Ontario, is planning to drill a series of 10 tests for gas on 880 acres leased in Middleton and North Walsingham Townships, Norfolk County. Production has been contracted to the Dominion Natural Gas Co.

On the Raleigh side of the River Thames, E. P. Rowe's No. 1, Bruette farm, Lot 5, Front concession, Raleigh Township, has been put on the pump. It had a swabbing production varying from 8 to 15 bbls.

In Lambton County, British Petroleum Co.'s No. 1, Archie McKinlay farm, Lot 22, Concession 9, Plympton Township, got a fair show of oil in the top of the big lime and is deepening below 2,300 feet.

Rocky Mountain Runs

Production estimates for the week ended November 16, 1935:

WYOMING

	Bbls.
Salt Creek	17,550
Big Muddy	1,560
Badger Basin	40
Byron	1,620
Dallas Derby	560
Dutton Creek	80
Elk Basin	shut in
Ferris	20
Frannie	300
Garland	990
Grass Creek	2,280
Greybull	10
Hamilton dome	1,190
Hudson	360
LaBarge	1,130
Lance Creek	2,380
Lost Soldier	1,170
Mule Creek	20
Midway	50
Oregon Basin	4,020
Osage	650
Pilot Butte	30
Rex Lake	shut in
Rock River	1,480
South Casper	510
Poison Spider	180
Teapot	20
Waugh dome	350
Total Wyoming	38,550

MONTANA

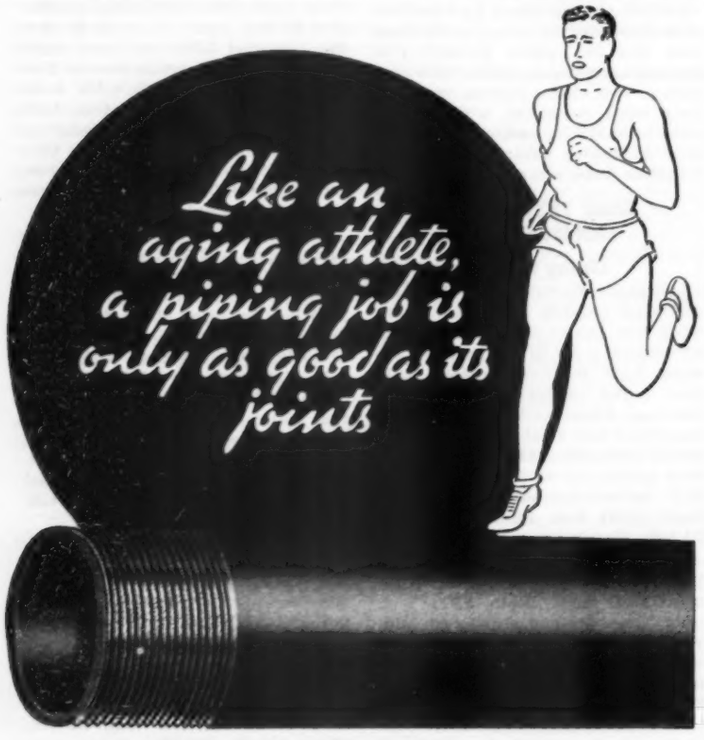
Buckley-Border	190
Cat Creek	810
Cut Bank	7,020
Dry Creek	120
Kevin-Sunburst	3,650
Lake Basin	50
Pondera	910
Total Montana	12,750

COLORADO

Florence	210
Fort Collins and Wellington	360
Iles dome	2,660
Moffat	420
Orchard	70
Rangely	90
Tow Creek	180
Total Colorado	3,990

NEW MEXICO

Artesia	590
Cooper area	8,790
Eunice area	10,060
Hobbs	28,590
Hogback	200
Hospah	shut in
Jal	3,830
Lea area	1,260
Maljamar	1,750
Monument	880
Rattlesnake	730
Table Mesa	80
Total New Mexico	56,760
Total Rocky Mountain region	112,050



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BRACKENRIDGE, PA.

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ALLEGHENY PRODUCTS: SHEETS FOR AUTOMOBILE BODIES, METALLIC FURNITURE, DEEP DRAWING—ALLEGHENY METAL —ALLEGHENY STAINLESS STEELS—ELECTRICAL SHEETS— STEEL CASTINGS—SEAMLESS TUBING—BOILER TUBES—PIPE

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Sept. 30, 1935	Aug. 31, 1935	Sept. changes	Sept. 30, 1934
1. Nongasoline-bearing crude, residuum, gas and diesel oils	65,446,342	64,826,227	+620,115	75,173,752
2. Gasoline-bearing crude	34,957,772	33,548,489	+1,409,283	36,838,951
3. Unblended natural gasoline	1,851,425	2,157,011	—305,586	2,771,595
4. Gasoline (not including distributing and service stations)	8,635,555	8,037,855	+597,700	11,992,911
5. Naphtha distillates	*1,325,955	*1,347,242	—11,287	*1,046,348
6. All other stocks	†8,989,222	†8,691,574	+297,648	†7,646,644
Total	121,216,271	118,608,398	+2,607,873	135,470,201
*Estimated amount of unfinished gasoline contained in item No. 5	960,711	948,906		841,022
†Coke included in item No. 6	509,151	515,427		597,811

West and North Texas

By
L. E. BREDBERG

SEMIWILDCAT WELL IN UPTON LOOKING GOOD FOR 200 BBLS.

FORT WORTH, Tex., Nov. 18.—Nineteen locations were staked in West Texas during the week, four wildcats. Twenty-one completions were reported.

W. C. Ray's No. 1 Cordova Union Land Co. semiwildcat, approximately 3 miles southeast of the Hurdle Pool in Upton County, has been completed at 2,125 feet after acidizing with 1,000 gallons under 400 pounds pressure. It pumped 25 bbls. per hour for 2½ hours and tubing was then closed in forcing a flow through the open casing into storage. At this rate of production it looks good for at least 200 bbls. per day on the pump and may prove better. Although a dry hole is located south of it, two to the northwest and one failure was drilled to the west, there is plenty of room for a separate pool east and north, instead of being connected with Hurdle production. It topped the lime at 1,965 feet and logged first oil at 2,056-67 feet. Before deepening it pumped only 17 bbls. daily at 2,111 feet. It is in section 3, Block AB, A. E. Baxley Survey.

Winkler County Extension

Sun Oil Co.'s No. 1 Walton, section 8, Block B-3, 1½ miles southwest of production in the Walton-Keystone area, eastern Winkler County, is preparing to shoot with total depth 3,454 feet. It has been standing with a hole full of fluid, mostly oil, and presages an extension.

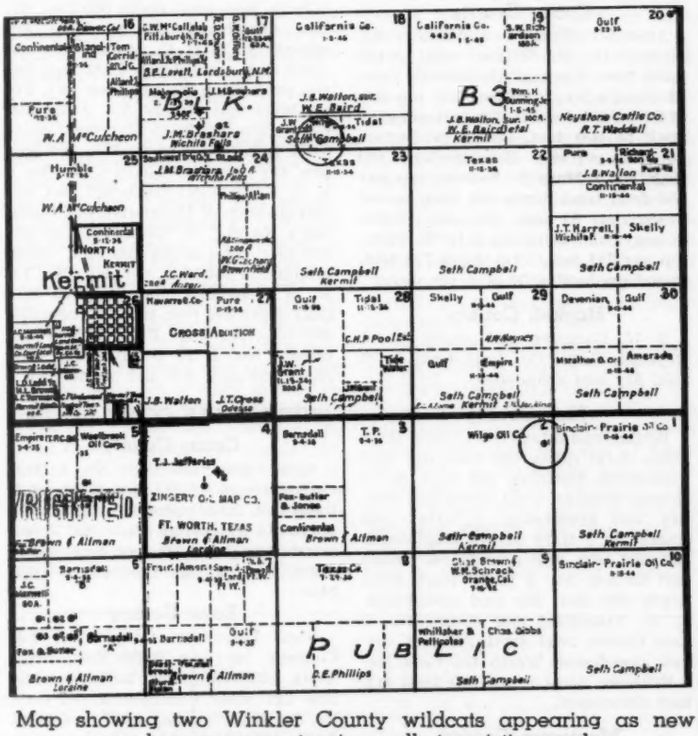
Westbrook Oil Corp. is extending the Brown and Altman producing area in the Howe-Halley trend, same county, by its No. 1 Brown and Altman in section 5, Block 5-F. It was given a 410-quart shot from 2,900 to 3,200 feet and is cleaning out preparing to test. It is one-half mile north of production. Southeast of the Brown and Altman area one test has been abandoned and another looks a disappointment. Cree and Hoover's No. 1 Crow, SW quarter of section 14, Block B-5, is dry at 3,270 feet. Elevation is 2,839 feet. This test is only 1 mile southeast of the nearest producer.

Ector County

Dunning and others' No. 1 Mrs. C. Scharbauer, section 33, Block 44, Township 1n, T.&P. Survey, about 2 miles north of the Goldsmith discovery of Gulf Production Co., and the same distance southeast of the lone producer in section 20, same block, struck gas at 2,125 feet with an increase at 2,655 feet which blew the tools up the hole and stuck them 300 feet off bottom, at which depth a fishing job was created. It is an important test due to its location between the two producing areas.

Gulf Production Co.'s No. 3 Goldsmith, section 22, Block 44, Township 1s, T.&P. Survey, a west offset to an extensive producer owned by Phillips Petroleum Co. and Pure Oil Co., encountered water at 3,891-94 feet with a showing of oil and is drilling at 3,940 feet in lime. Oil was picked up in the offset at about 150 feet deeper than this showing, which makes the Goldsmith test look puzzling.

Sun Oil Co. and Atlantic Oil Producing Co.'s No. 1 Holt, section 6, Block 43, Township 1n, T.&P. Survey, near the Andrews County line and 2 miles north of the Cowden production, is down 4,255 feet in lime appearing as a sulfur water well. It picked up a minor showing of oil from 4,098-4,115 feet.



Map showing two Winkler County wildcats appearing as new pool openers or extension wells to existing pools

Jones County Failure

An important failure was chalked up in the recently discovered Lueders pool in eastern Jones County when Humphreys and Guiberson's No. 1 Swenson, section 1, I.&G.N. Survey, about three-quarters of a mile northwest of the nearest producer, was abandoned at a total depth of 2,052 feet. This puts two tests, drilling northwest from the field, in an unfavorable light. The field defined on two sides, one duster having been completed to the east.

Peckham and Danciger Oil & Refining Co. are drilling an interesting test about one-half mile northeast of the nearest producer on lands owned by the city of Stamford, section 204, B.B.B.&C. Survey.

Three wildcat locations were staked in Jones County. Shaheen and Rose are rigging up No. 1 T. B. McCoy, section 1, Block 16, T.&P. Survey, 1½ miles north of Hodges, and is to test the Hawley, Sayles and King sands, which produce in the county. Brown Eagle Oil Co. is rigging a wildcat on the Bert Fields lands in the Samuel Andrews Survey, about 4 miles east of Hawley, and 1½ miles west of a dry hole on the Woods lands.

North of Jones County in Haskell, Anderson and Kerr of Oklahoma City, have assembled a 1,000-acre block centering in the H. Covington Survey, in the southeast corner of the county, for a 2,150-foot test to be spudded in in 90 days. It is about 3 miles north and west of 1,700-1,800-foot production and is in an area where many dry holes have been drilled.

J. L. Pippett of Abilene has assembled 700 acres in a block centering in section 19, Block 15, T.&P. Survey, 2 miles northwest of the Hawley pool in Jones County and is to drill a 2,250-foot test, to be spudded in 60 days. Moutray and King of Abilene have assembled 500 acres centering in section 42, Block 15, for a 2,150-foot King sand test to be spudded in 90 days. This location will be about 1½ miles northeast of the Hawley pool. Another block is being assembled by the same operators about 1½ miles east of the pool and a deep test will be drilled.

Winkler County Deep Tests

A 7,000-foot test is scheduled to get under way in section 72, Block A, G.M.M.B.&A. Survey in southwest Winkler County, northeast of the O'Brien-Hutchings pool, about 3 miles north and west of a dry hole and about the same distance southwest of another dry hole. Location will be on the Sealy ranch and the contract depth will make it exceptionally interesting. McKague and Tom Sloan are to drill it.

Crockett County Wildcat

J. G. Harris has moved a spudder on the Parker lands, section 83, Block 1, I.&G.N. Survey, northeast of the Yates field and in western Crockett County, for a 2,000-foot wildcat which will seek production in the horizon from which the Yates wells produce.

Scurry Duster

Magnolia Petroleum Co. has given up No. 1 W. M. Scott, section 186, Block 3, H.&G.N. Survey, 5 miles south of Snyder in Scurry County, at a total depth of 4,125 feet. Elevation is 2,341 feet. It picked up a hole full of sulfur water in the big lime.

Garza Failure

Dobbs Oil Co. of Dallas drilled another failure when No. 1 W. E. Connell, Section 75, Block 5, G.H.&H. Survey, several miles northeast of Post in Garza County, was given up at a total depth of 2,870 feet when it struck sulfur water.

Ector County Water

Sun Oil Co.'s No. 1 Edwards, a wildcat about 14 miles southwest of Odessa and southwest of the Addis Pool in Ector County, appears a failure after striking 150 feet of water per hour at 4,122-45 feet. It is drilling at 4,175 feet but probably will be abandoned.

Loving County Showing

Mason Oil Co.'s No. 1 Kyle, section 22, Block 55, Township 1, T.&P. Survey, a wildcat in northern Loving County, topped Delaware lime at 3,912 feet and Delaware sand at 3,938 feet, logging a good showing of oil at 3,970-74 feet. It ran into water at the bottom of the hole, 4,002 feet, and fluid rose 2,500 feet, 500 feet oil. It is plugging back to shoot the upper showing. A small well was completed a couple of years ago in this area, several miles northwest.

Menard Wildcat

Titan Oil Co., subsidiary of Wilcox Oil & Gas Co., which has just com-

pleted an Ordovician failure in Kimble County, is rigging up for an Ordovician test in section 158, E.L.R.R. Survey, on the Lee Murchison ranch, 8 miles south of Menard in Menard County, 6 miles north of the Kimble County line. It is to go to 3,000 feet or more. The company has a block of between 10,000 and 12,000 acres surrounding the location. The Ellenburger was topped in the Kimble County failure at 3,710 feet, which was abandoned at 4,857 feet. Edwards County is slated for an Ordovician test, probably to be drilled in section 2, Block DA, G.C.&S.F. Survey, 15 miles southeast of Rock Springs, in the southeastern part of the county.

Gaines Wildcat

The wildcat test of Walsh and Harry Adams Corp. on the Averitt lands, in section 22, Block G, W.T. R.R. Survey, 3 miles northwest of Seminole in Gaines County, is drilling with cable tools after striking more gas from 3,025-35 feet. It is below 3,100 feet. Elevation is 3,322 feet and top of the Yates sand has not been definitely picked.

RANGER AND WICHITA FALLS

There were 46 locations staked in the Wichita Falls district with 51 tests completed, 24 producers. The Portwood pool in Baylor County had three more large producers, 1,000 bbls. or better. One test was abandoned.

Pitzer and West and Simms Oil Co. brought in a good lime well one-half mile northeast of their No. 1 producer 6 miles northwest of Graham in Young County. It made 500 bbls. from saturated lime logged at 3,815-63 feet and was shut in for connections.

Fain & McGaha Oil Corp. is to drill a deep wildcat on the E. Foster land just south of Red River in the northern part of Wichita County, in the Stephen Denisor Survey, Abstract 64, about 1½ miles northwest of the old Hirschi pool.

Wilbarger Sale

Easter Oil Co. has sold five leases in Wilbarger to W. McDonald of Wichita Falls for a reported consideration of $110,000. There are 13 wells with a total daily gross production of 120 bbls. All the leases fall in Block 4, H&T.C. Survey on the W. T. Waggoner estate.

Kittery Oil Co. of Wyoming has purchased an 83-acre lease including two wells on the Annie Earheart farm in section 18, Block 11, T.&P. Survey, one-half mile west of Albany, and another lease of 120 acres with one well, on the T. W. Lee lands 5 miles southwest of Albany, in Shackelford County. Texas C Oil Co. was the vendor. The former lease produces from the 700-foot Bluff Creek sand and the latter from the Tannehill sand.

WICHITA FALLS (North Texas) COMPLETIONS

Archer County

Bridwell Oil Co.'s No. 1 Mrs. G. E. Campbell, total depth 1,385 feet, dry and abandoned. Cable Oil Co.'s No. 6 Webb, top pay 695 feet, total depth 703½ feet, initial production 20 bbls. per day. Chatham and Bohner's No. 1 J. D. Carpenter, top pay 1,057 feet, total depth 1,065 feet, initial production 92 bbls. per day. Barney Cockburn's No. 10 R. J. Andrews, top pay 1,308 feet, total depth 1,392 feet, initial production 82 bbls. per day. Fain-McGaha's No. 3 Morrison, total depth 1,411 feet, dry and abandoned. Texas Co.'s No. 24 J. T. Richardson, top pay 1,340 feet, total depth 1,348½ feet, initial production 23 bbls. per day. J. H. Turner's No. 1 E. N. Birdwell, total depth 675 feet, dry and abandoned. White and Duncan's No. 1 C. Webb, total depth 705 feet, dry and abandoned.

Baylor County

Consolidated Oil Co.'s No. 13-R Portwood, top pay 1,320 feet, total depth 1,340 feet, initial production 1,020 bbls. per day; No. 2-U Portwood, total depth 1,423 feet, dry and abandoned. Ray and Staniforth's No. 30-C Portwood, top pay 1,332 feet, total depth 1,350 feet, initial production 1,100 bbls. per day; No. 31-C Portwood, top pay 1,342 feet, total depth 1,352 feet, initial production 1,080 bbls. per day.

Clay County

E. F. Scott and others' No. 1 G. D. Rigsby, top pay 196 feet, total depth 205 feet, initial production 8 bbls. per day. Texas Co.'s No. 2 Goetze, top pay 1,091 feet, total depth 1,098 feet, initial production 56 bbls. per day.

Cooke County

Dowen Drilling Co. and others' No. 1 Mrs. O. W. Wilson, total depth 1,000 feet, dry and abandoned. Fain-McGaha's No. 2 Feldenhoff, top pay 674 feet, total depth 730 feet, plugged back to 690 feet, initial production 10 bbls. per day. Schermerhorn Oil Co.'s No. 1 Mary E. Kessler, top pay 860 feet, total depth 881 feet, initial production 32 bbls. per day. Seitz-Comegys and Seitz' No. 3 R. W. Trew, top pay 711 feet, total depth 728 feet, initial production 30 bbls. per day.

Haskell County

J. W. Hampton and others' No. 1 Reynolds Cattle Co., total depth 1,602 feet, dry and abandoned.

Jack County

Bolling and others' No. 2 Mrs. Rosa Allen, total depth 590 feet, dry and abandoned. Compton Oil Co.'s No. 1 George Dement, total depth 522 feet, dry and abandoned. N. Gray and others' No. 1 Mary Brown, total depth 490 feet, dry and abandoned. Smith and Gaines' No. 1 L. R. Burt, total depth 396 feet, dry and abandoned. L. W. Standford and others' No. 1 Less Carter, total depth 295 feet, dry and abandoned. Worth Oil Co.'s No. 1 Gillespie, total depth 300 feet, dry and abandoned.

Montague County

Bourland and Gannon's No. 1 W. W. Jones, top pay 1,815 feet, total depth 1,821 feet, initial production .05 bbls. per day. Harrington and others' No. 1 Heaton Brothers, total depth 813 feet, dry and abandoned. Texas Co.'s No. 5-A R. W. Cunningham, top pay 932 feet, total depth 947½ feet, initial production 34 bbls. per day; No. 7-B Cunningham, top pay 940 feet, total depth 948½ feet, initial production 40 bbls. per day.

Wichita County

Boardman Brothers' No. 4 J. L. Jackson, total depth 710½ feet, dry and abandoned; No. 6-C J. L. Jackson, top pay 694 feet, total depth 697 feet, initial production 20 bbls. per day; No. 7 J. L. Jackson, total depth 715 feet, dry and abandoned. Bourbon Realty Co.'s No. 2 Birk, top pay 159 feet, total depth 177 feet, initial production 2 bbls. per day. Bridwell Oil Co.'s No. 17 Allen and Kemp, total depth 1,081 feet, dry and abandoned. Coleman and Coppock's No. 2 E. Kempner, total depth 1,075 feet, dry and abandoned; No. 1-A Albert May, total depth 850 feet, dry and abandoned. Z. F. Dale's No. 1-A J. E. Roller estate, total depth 383 feet, dry and abandoned. Fisher-Gilliland and others' No. 11 C. Birk, top pay 1,592 feet, total depth 1,604 feet, initial production 50 bbls. per day. King Royalty Co. and others' No. 6-H Waggoner estate, top pay 1,555 feet, total depth 1,570 feet, initial production 165 bbls. per day. W. B. Omohundro and others' No. 10 D. E. Hooks, top pay 1,638 feet, total depth 1,657½ feet, initial production 35 bbls. per day. J. S. Morris' No. 2 F. P. Warren, top pay 568 feet, total depth 570 feet, initial production 5 bbls. per day.

Wilbarger County

Lido Oil Co.'s No. 3-A Waggoner estate, total depth 262 feet, dry and abandoned; No. 5-A Waggoner estate, total depth 242 feet, dry and abandoned.

Young County

L. T. Burns' No. 1 T. B. Griffin, total depth 1,150 feet, dry and abandoned. L. A. Hedrick and others' No. 1 L. D. Box, total depth 600 feet, dry and abandoned. L. A. Long and others' No. 3 E. C. Stovall, top pay 2,512 feet, total depth 2,582 feet, initial production 250 bbls. per day. Pitzer-West and Simms' No. 2 Gardner estate, top pay 3,815 feet, total depth 3,861 feet, initial production 700 bbls. per day flowing. Texas Co.'s No. 3 E. C. Keith, total depth 801 feet, dry and abandoned. Underwood and Campbell's No. 6-C R. Campbell, top pay 878 feet, total depth 899 feet, initial production 250 bbls. per day; No. 7-C R. W. Campbell, top pay 879 feet, total depth 896 feet, initial production 260 bbls. per day. J. R. Wilson and others' No. 2 J. W. Bullock, total depth 429 feet, dry and abandoned.

WEST TEXAS COMPLETIONS

Crane County

Gulf Production Co.'s No. 2 Henderson, top pay 3,513 feet, total depth 3,525 feet, initial production 327 bbls. Magnolia Petroleum Co.'s No. 2 Edwards, top pay 3,535 feet, total depth 3,538 feet, initial production 1,620 bbls.

Ector County

Shell Petroleum Corp.'s No. 1-B Connell, top pay 3,439 feet, total depth 3,676 feet, shot, initial production 221 bbls. Continental Oil Co.'s No. 3-A Kloh, top pay 4,167 feet, total depth 4,270 feet, shot, initial production 1,298 bbls.

Fisher County

Southern Petroleum Corp.'s No. 3-B Pardue, top pay 3,111 feet; total depth 3,117 feet, acidized, initial production 463 bbls.

Pecos County

West State Oil Co.'s No. 1 Tippett, top pay 1,448 feet, total depth 1,500 feet, initial production 450 bbls. per hour.

Howard County

Dunnigan and Hyer's No. 2 Clay, top pay 2,483 feet, total depth 2,519 feet, shot, initial production 50 bbls. California Co.'s No. 5 Bell, top pay 2,465 feet, total depth 2,785 feet, shot, initial production 213 bbls. International Petroleum Corp.'s No. 5 Kloh, total depth 2,777 feet, plugged back to 2,655 feet, shot, initial production 10 bbls. oil, some water. Iron Mountain Oil Co.'s No. 8 Reed, top pay 2,650 feet, total depth 2,675 feet, shot, initial production 80 bbls. oil and 150 bbls. water. Merrick and Lamb's No. 3 Bell, top pay 2,468 feet, total depth 2,844 feet, initial production 54 bbls.

Scurry County

Magnolia Petroleum Co.'s No. 1 Scott, 5 miles south of Snyder, dry and abandoned 4,125 feet, elevation 2,341 feet.

Upton County

Texas Pacific Coal & Oil Co.'s No. 1 Lane, top pay 2,115 feet, total depth 2,265 feet, acidized, initial production 160 bbls. day.

Ward County

Gulf Production Co.'s No. 62 O'Brien, top pay 2,568 feet, total depth 2,876 feet, shot, initial production 171 bbls.

Winkler County

Humble Oil & Refining Co.'s No. 3-A Walton, top pay 2,900 feet, total depth 3,120 feet, shot, initial production 559 bbls. Skelly Oil Co.'s No. 3 Halley, total depth 3,855 feet, acidized and shot, initial production 10,000,000 feet of gas. Texas Pacific Coal & Oil Co.'s No. 5 Daugherty, top pay 2,800 feet, total depth 2,992 feet, shot, initial production 998 bbls. Shell Petroleum Corp.'s No. 1 Hendricks, top pay 2,794 feet, total depth 2,995 feet, shot, initial production 415 bbls. Richardson's No. 2 Walton, top pay 3,296 feet, total depth 3,580 feet, shot, initial production 514 bbls. Magnolia Petroleum Co.'s No. 1 Sealy, top pay 3,093 feet, total depth 3,138 feet, shot, initial production 234 bbls. Cree and Hoover's No. 1 Crow, dry and abandoned 3,270 feet, elevation 2,839 feet.

PANHANDLE COMPLETIONS

Carson County

Magnolia Petroleum Co.'s No. 4 fee, top pay 3,154 feet, total depth 3,245 feet, initial production 91 bbls. pumping. Phillips Petroleum Co.'s No. 3 Cooper, top pay 3,002 feet, total depth 3,040 feet, shot, initial production 413 bbls. pumping.

Gray County

Bradshaw Oil & Gas Co.'s No. 3 Arnold, top pay 3,223 feet, total depth 3,283 feet, shot, initial production 683 bbls. pumping. Danciger Oil & Refining Co.'s No. 7 Barrett, top pay 3,225 feet, total depth 3,304 feet, shot, initial production 918 bbls. pumping; No. 15 Powell-Beck, top pay 2,845 feet, total depth 2,898 feet, initial production 1,635 bbls. on gas lift. Hagy et al's No. 1 Chadwick, top pay 2,983 feet, total depth 3,325 feet, plugged back to 3,030 feet, initial production 20 bbls. King Royalty Co.'s No. 3 Simpson, top pay 3,200 feet, total depth 3,283 feet, shot, initial production 551 bbls. pumping; No. 3 North Vollmert, top pay 3,225 feet, total depth 3,290 feet, shot, initial production 468 bbls. pumping. Magnolia Petroleum Co.'s No. 8 Harrah, top pay 3,130 feet, total depth 3,227 feet, shot, initial production 314 bbls. pumping. Wilcox Oil & Gas Co.'s No. 38 Combs-Worley, top pay 3,006 feet, total depth 3,032 feet, initial production 538 bbls. pumping.

Hutchinson County

International Petroleum Co.'s No. 26 Lewis-Badger, top pay 2,902 feet, total depth 2,963 feet, shot, initial production 600 bbls. pumping; No. 28 Lewis-Badger, top pay 2,952 feet, total depth 3,012 feet, shot, initial production 677 bbls. pumping.

Southwest Texas District

By GEORGE WEBER

NEW NUECES COUNTY STRIKE INDICATES ANOTHER DISTRICT

SAN ANTONIO, Tex., Nov. 18.—Oil interest in Southwest Texas which recently has been chiefly divided among developments in Duval, Webb, Guadalupe and Nueces Counties was attracted strongly to the latter area, as, late in the week a third new production area was discovered in southern Nueces County. The Fault Line, Lower Rio Grande Valley and Goliad, Live Oak and Bee Counties, points of minor but prospective greater importance, claimed their share of the limelight until the Nueces County discovery took undivided attention.

Nueces County has enjoyed extensive development in the past few weeks. In addition to steady activity in two proven fields, wildcatting is prevalent throughout the county. Climaxing the earlier discovery of two other producing areas, the Santa Clara Oil Co. of Atkins and O'Neill, San Antonio, made a drill stem test on No. 1 Driscoll Sevier, approximately 2 miles northeast of the town of Driscoll, and recovered 2,380 feet of pipe line oil in 12 minutes. The test was made at 3,807-16 feet by steel line measurement, and one-quarter inch bottom and three-eighths inch top chokes were used. At the latest report, casing was being set at 3,807 feet and the plugs will be drilled early in the week. Still greater importance is lent to this strike by the character of the oil. It averages 24 gravity by unofficial test, and is sweet in comparison to much of the crude produced in the lower coastal region running appreciably high in sulfur content.

Attending the strike, intense activity began in leasing open acreage in the vicinity of the wildcat. The test is on the extensive old Driscoll ranch, and considerable acreage surrounding it is held by Atkins and O'Neill, Harry Hotchkin and other Southwest Texas operators. The importance of Swiger, Howeth and others' No. 1 Eschberger wildcat about 2 miles northeast was enhanced decidedly by the Santa Clara strike.

Five Wildcats Under Way

Elsewhere in Nueces County activity continued strong. Five wildcats are under way, and in the proven areas of Saxet and Baldwin several new locations have been made in the past two weeks. J. K. Culton, who recently brought in No. 1 Baldwin on the outskirts of Corpus Christi, has announced a new offset location, No. 1 Russell Savage. Derrick is being skidded to the location and drilling will be under way shortly. In western Nueces County, La Jita Corp.'s No. 1 King wildcat which showed light oil at 3,980-87 feet was plugged back to 5,046-60 feet and completion at that depth is being attempted.

In the Saxet field, Southern Minerals Corp. made a drill stem test at 4,384-98 feet on No. 1-A Isensee in Survey 404 and tested 18 thribbles of oil with 18 pounds working pressure in 10 minutes. In event production is completed at this level, a new sand will be added to the field, according to reports. Saxet production heretofore has been found between 4,500 and 4,800 feet, only one other well besides Southern Minerals' No. 1-A Isensee having produced at 4,300 feet. One well was completed in each of the county's active pools; Shell Petroleum Corp.'s No. 2 Isensee brought in for no gauge at 4,863 feet in the Saxet, and Gilcrease Oil Co.'s No. 2 Sanders, completed at 4,049 feet for 16 bbls. per hour through open 2-inch tubing.

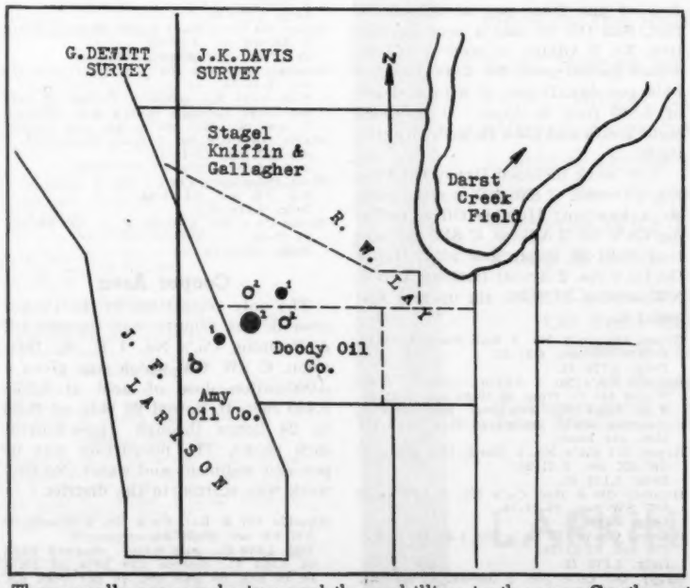
Duval County

The principal interest in Duval County lies in the Seven Sisters field, where two outpost tests are approaching critical depths. T. P. Morgan's No. 1 Welder, a south outpost, was last reported at 2,577 feet and showing water. The test is in Survey 591 well out of the field and is running low, with poor indications for production. On the northeast, Westheimer and Daube are down 1,500 feet in No. 1 Z. Campos in Survey 224. Henderson and Harvey are moving in on No. 1 Wood Welder location, a semiwildcat west of the field, in Survey 381. Within the field three locations were made: Atlantic Oil Producing Co.'s No. 3 B. Welder, Humble Oil & Refining Co.'s No. 4 T. D. Smith, and Mid-Continent Petroleum Corp.'s No. 4 Serna. Mid-Continent completed No. 2 Serna for 35 bbls. per hour as the only new well of the week in Seven Sisters. Of the five other wells drilling, four are set on the sand and the fifth is coring for it.

Loma Novia

Loma Novia continued its position as the leading center of activity in this section with 16 new locations and 15 completions for the week. Among the wells completed were: Hamill, Smith and Ogdens' four wells in Survey 77; No. 23 Hubbard, making 35 bbls. per hour on a half-inch choke, Nos. 4 and 21 Hubbard, making 32 bbls per hour each on half-inch chokes, and No. 27 Hubbard, a 24-bbl. per hour producer; Humble's No. 4-C Welder, eastern field extension in Survey 554, making 14½ bbls. per hour on a half-inch choke; Magnolia's No. 10 Hahl, completed for 25 bbls. per hour on a half-inch choke; Magnolia's No. 1-C and No. 2-C Magnolia-Hahl, brought in on the pump; Shell's Nos. 10 and 11 Hubbard in Survey 77 brought in for 17 and 18 bbls. per hour, respectively; and Texas Co.'s No. 11 Wendt with an initial of 30 bbls. per hour on a three-quarters inch choke.

Tests were made during the week on two wells in smaller Duval County fields. Stanolind Oil & Gas Co. tested dry gas on the No. 2 Farmers Life in the Labbe field, east of Seven Sisters. The test was run at 2,453-66½ feet. In the Kohler field, south of Government Wells, California Co.'s No. 1 Kohler cored sands at 2,784-94 feet and 2,857-70 feet with odor of oil and were running Schlumberger test to total depth of 3,777 feet.



Three wells are producing and three drilling in the new Southwest Darst Creek or Clark field, Guadalupe County. The large circle indicates the discovery well across the Guadalupe River

Wildcatting in Duval County received a spurt with two locations. Magnolia Petroleum Co. will move in on No. 1 Milano Land & Garden Co. in Survey 85, and Rogers Oil & Gas Co. is moving in material on a test to be drilled in section 120. Magnolia will also begin shortly on a test in section 153 west of the S.R.C. pool on the Worden land. The company abandoned No. 1 D.C.R.C.-Sentz in Survey 155 at 3,822 feet during the week.

Webb County

Interest in Webb County is still centered on the Lopez pool. With the recent showings in the south extension and intervening area, the size and shape of the field is more nearly apparent, and tests now getting under way will add further to information on the prospective development. Two new locations were announced on the south edge proper. Superior Oil Co. of California will drill plugs early in the week on No. 1 Billings, west offset of Lewis' No. 1 Lopez which opened the south extension recently. Nixon Talbot's No. 1 Billings in Survey 113 is swabbing in at 2,177 feet. One completion was made in the south edge of the main part of the field; Mills Bennett Production Co.'s No. 1 Montemayor, flowing from sand at 2,184-96 feet.

The O'Hern field increased activity with four new locations and one completion.

Fault Line

In the Fault Line drilling was comparatively quiet, with the three tests in the new Southwest Darst Creek or Clark field spudding in simultaneously. In Bastrop County two tests were abandoned: Marts and Beavens' No. 1 Kirksey at 2,560 feet and Port Isabel Oil & Gas Co.'s No. 1 Smith. Inter-Allied Petroleum Co. found the Edwards dry in No. 1 Wells in Gonzales County. It is standing at 4,079 feet waiting orders.

San Patricio

San Patricio County came in for more than the usual interest with three locations in the Plymouth field and a wildcat location 3 miles west of Sinton, Stanolind Oil & Gas Co.'s No. 1 Alamo Iron Works. Two other wildcats are under way. The Plymouth field had one completion and several wells approaching completion. Magnolia Petroleum Co.'s No. 3 Corpus Christi Bank in the southern edge tested 1,080 feet of oil on a seven-minute drill stem test and is setting casing. This test was made at the third sand discovered by the company's No. 1 on the same lease.

Bee, Live Oak, Goliad

The area including Bee, Live Oak and Goliad Counties is the scene of increasing wildcat and proven play.

Rocky Mountain Area

STANOLIND GETS A 7,000-BBL. WELL IN HOBBS, LEA COUNTY

By T. R. INGRAM

DENVER, Colo., Nov. 18.—There were no completions in Colorado for the week. Two new locations were made, one in Archuleta and the other in Park Counties.

In Southeastern New Mexico a 7,000-bbl. well was completed in the Hobbs pool in Lea County and a 2,300-bbl. well was completed in the Eunice pool in the same county.

In northwest New Mexico, an offset to the discovery well in the Red Mountain district in McKinley County was dry and abandoned. Two new operations were reported in San Juan.

The Ohio Oil Co.'s No. 5 Diamond Cattle, on the Rock River structure in Wyoming, was completed for 180 bbls. in the Sundance. The Continental Oil Co.'s No. 3 Joss proved to be one of the best Sundance wells so far completed in Lance Creek and made 2,833 bbls. first 24 hours. The Texas Co. completed a 60-bbl. pumper at LaBarge and Weston County had a small shale well.

NEW MEXICO

The New Mexico Oil Conservation Commission increased the allowable outlet for November to 61,000 bbls. a day, compared with 60,000 bbls. in October. Allocations to pools outside of Lea County for the first half of November are as follows:

	Bbls.
Artesia	2,416
Hogback	200
Rattlesnake	750
Table Mesa	85
Aztec-Bloomfield	10
Total	3,461

Allocations to Lea County marginal units are as follows:

	Units	Allocation
Cooper	16	903
Eunice	4	167
Hobbs	1	7
Jal	23	1,214
Lea	2	57
North Lea	2	69
Total	48	2,417

Allowable per well per day for the 445 nonmarginal Lea County wells is 124 bbls. Total allowable by pools for Lea County, including marginal and nonmarginal wells, is as follows:

	Units	Allocation
Cooper	84	9,325
Eunice	102	12,319
Jal	48	4,314
Lea	11	1,173
North Lea	2	69
Hobbs	231	28,593
Monument	14	1,736
Total Lea County	492	57,529

Pipe line runs for October were as follows:

	Bbls.
Hobbs	880,466
Cooper	277,977
Eunice	339,949
Jal	113,750
Lea	34,045
North Lea	1,945
Monument	50,529

Hobbs Area

Stanolind Oil & Gas Co. got a big producer in the Hobbs pool, when its No. 7-K Capps, 1,980 feet from south and 2,310 feet from east lines of SE quarter section 3-19-38, was completed, flowing 7,128 bbls. of oil and 12,000,000 feet of gas from pay at 4,140-4,207 feet. It had been acidized with 12,000 gallons. No new work was reported during the week.

Gypsy Oil Co.'s No. 1 Steve Taylor, C SE NE sec. 24-18-38 (wildcat).
T.D. 4,579 ft., will set 5½-in. casing at 4,525 ft.

National Securities Oil Co.'s No. 1 Linam, NE SE SW sec. 33-18-37.
T.D. 4,506 ft.; P.B. to 4,238 ft.; 1,000 ft. oil, 300 ft. water in hole, shut down for orders.

Tide Water Oil Co.'s No. 1 State, 2,310 ft. from N, 330 ft. from E lines, sec. 14-18-37.
T.D. 4,368 feet; swabbed sulfur water after acidizing. Plugged back to 3,860 ft. to test sand. Perforated casing at 3,345-65 ft.; 4 ft. oil in hole; testing.

Gypsy Oil Co.'s No. 2 Culp, C SW SW sec. 19-19-37.
T.D. 3,985 ft.; making swabbing test.

Shell Pet. Corp.'s No. 3 Rice, 1,650 ft. from S and 990 ft. from E lines of SE ¼ sec. 13-18-37.
Set 7-in. casing at 3,960 ft., making repairs.

Jeffers Oil Corp.'s No. 1 Britt permit, 1,980 ft. from N and W lines, sec. 7-20-37.
T.D. 3,881 ft.; flowed 200 bbls. in one hour through drill pipe. Will tube.

Shell Pet. Corp.'s No. 1 State E, C W half SE SE sec. 14-18-37.
Set 9⅝-in. casing at 1,612 ft.

Gypsy Oil Co.'s No. 3 North Grimes, SE NW SW sec. 21-18-38.
Drlg. 3,295 ft.

Texas Co.'s No. 1 Mattern, C NW SW sec. 20-19-37.
Rigging up rotary.

Phillips Pet. Co.'s No. 1 Land Office, C NE SW sec. 19-19-37.
Drlg. 577 ft.

Barnsdall Oil Co.'s No. 2 Cooper, C SW SW Sec. 7-20-37.
Rigging up rotary.

Eunice Area

One well was completed in the Eunice district in the course of the week. Atlantic Oil Producing Co.'s No. 2 State E, C NW SW section 5-21-36, flowed 2,304 bbls. of oil through three-fourths inch choke on 2½-inch tubing, in 24 hours, with 2,000,000 feet of gas from pay at 3,786-3,856 feet. Sun Oil Co. has a near completion, No. 1 Adkins, in section 3-21-36, which looked good for 2,000 to 3,000 bbls. per day. It was at a total depth of 3,885 feet, in lime. It swabbed eight hours and then flowed, cleaning itself.

New work included Gypsy Oil Co.'s No. 2 Orcutt, C SW NW section 5-21-36, a location; Humble Oil & Refining Co.'s No. 2 Adkins, C SW SW section 10-21-36, cellar and pits; Gypsy Oil Co.'s No. 2 Arnott-Ramsay, C NW NW section 21-21-36, rig up and material in.

Gypsy Oil Co.'s No. 6 Ball-Ramsey-State, C NW SW sec. 4-21-36.
Drlg. 2,720 ft.

Sun Oil Co.'s No. 1 Adkins, 1,786 ft. from S and 466 ft. from W lines sec. 3-21-36.
T.D. 3,885 ft., swabbed and flowed, cleaning itself; estimated flow over 100 bbls. per hour.

Gypsy Oil Co.'s No. 1 North-Bell-State, C SE SE sec. 6-21-36.
Drlg. 2,179 ft.

Humble Oil & Ref. Co.'s No. 1 Adkins, C SW SW sec. 10-21-36.
Drlg. 2,500 ft.

General Crude Oil Co.'s No. 1 State, C NW SW sec. 32-21-36.
Drlg. 2,775 ft.

Gypsy Oil Co.'s No. 2 Janda, C NE SE sec. 20-21-36.
Drlg. 3,550 ft.

Gypsy Oil Co.'s No. 1 Arnott-Ramsey, C SW SW sec. 21-21-36.
Set 5½-inch casing at 3,866 feet, in lime.

Penrose & Rowan's No. 1 Carry, C NW SW sec. 22-22-37.
Set 8¼-in. casing at 1,069 ft.

Devonian Oil Co.'s No. 1 State-Heasley, C SE SW sec. 5-21-36.
Drlg. 1,615 ft.

Continental Oil Co.'s No. 4-B-8 Meyer, C NW NW sec. 8-21-36.
Drlg. 2,190 ft.

Getty Oil Co.'s No. 1 State B, C NE NE sec. 16-21-36.
Rig.

Continental Oil Co.'s 5-A-17 Meyer, C SE SW sec. 17-21-36.
Set 7⅝-in. casing at 1,647 ft.

Continental Oil Co.'s No. 2-B-17 Meyer, C SE SE sec. 17-21-36.
Drlg. 2,890 ft.

Continental Oil Co.'s No. 6-C-20 State, C NE NW sec. 20-21-36.
Drlg. 2,845 ft.

Shell Oil Corp. and Devonian Oil Co.'s No. 3 State, C NE NE sec. 20-21-36.
Drlg. 2,845 ft.

Continental Oil Co.'s No. 3-A-30 Lockhart, C NE NW NE sec. 30-21-36.
Drlg. 1,965 ft.

Texas Co.'s No. 1 J. M. Dean, C SE SW sec. 28-22-36.
Set 12½-in. casing at 280 ft.

Atlantic Oil Producing Co.'s No. 2 State H, C SE NE sec. 5-21-36.
T.D. 3,900 ft.; testing.

Skelly Oil Co.'s No. 5 State B, C SW NE sec. 16-21-36.
T.D. 940 ft.; S.D. for repairs.

Continental Oil Co.'s No. 7-C-20 State, C NE SW sec. 20-21-36.
Drlg. 1,000 ft.

Monument Area

There were no completions in the Monument area in Lea County but two new operations were started. Amerada Petroleum Corp. was building rig for No. 1 State H, C SW SE section 1-20-36, and Skelly Oil Co. had cellar and pits dug for No. 1 State D, C SE SE section 1-20-36.

Republic Prod. Co.'s No. 1 Selby & Maveety C SE SW sec. 36-19-36.
T.D. 3,940 ft.; acidized; flowed 76 bbls. in one hour through 3-in. choke; testing.

Sun Oil Co.'s No. 3 Weir, C SE NE sec. 35-19-36.
T.D. 3,945 ft.; acidized; flowed 10 bbls. oil per hour; later stopped flowing and was put on pump.

Texas Co.'s No. 1 State-E, C SW SW sec. 1-20-36.
Drlg. 3,270 ft.

Gypsy Oil Co.'s No. 1 South Graham-State, C SE SE sec. 2-20-36.
Set 7-in. casing at 3,705 ft.

Superior Oil Co.'s No. 2 State, C NW NE sec. 2-20-36.
T.D. 3,935 ft.; acidized; flowed 45 bbls. per hour through tubing and 7,000,000 ft. gas per day; set packer and testing.

Skelly Oil Co.'s No. 1 State-Monument, C SE SE sec. 13-19-36.
Drlg. 3,000 ft.

Shell Petroleum Corp.'s No. 1 State C, C NE NE sec. 24-19-36.
Drlg. 3,110 ft.

Texas Co.'s No. 1 State F, C NE SE sec. 24-19-36.
Drlg. 3,270 ft.

Cooper Area

The only completion in the Cooper area in Lea County was Humble Oil & Refining Co.'s No. 1 E. W. Harrison, C SW SW which was given a 3,000-gallon dose of acid at 3,355-2,430 feet. It flowed 86 bbls. of fluid in 24 hours through three-fourths inch choke. The production was 60 per cent sediment and water. No new work was started in the district.

Humble Oil & Ref. Co.'s No. 3 Mosely, C NE SE sec. 10-24-36.
T.D. 3,600 ft.; salt water; plugged back to 3,555 ft.; flowed 220 bbls. of fluid in 16 hrs. on gas lift, 40 per cent b.s. and water.

Tide Water Oil Co.'s No. 1 Coats, C SW NE sec. 10-24s-36e.
T.D. 3,656 ft.; waiting for perforating gun.

Phillips Pet. Co.'s No. 1 Woolworth, C NE NW sec. 33-24-37 (wildcat).
T.D. 4,200 ft.; tested no oil or gas; plugged back to 3,540 ft.

Skelly Oil Co.'s No. 1 Harrison, C NW SW sec. 5-23-37.
Drlg. 2,975 ft.

Gypsy Oil Co.'s No. 1 Lemunion, C NE NE sec. 28-23-37.
Shut down at 539 ft.

Gypsy Oil Co.'s No. 2 Cooper, C NW SE sec. 14-24-36.
T.D. 3,410 ft.; standardizing.

Gypsy Oil Co.'s No. 2 Cooper, C NW SE sec. 23-24-36.
T.D. 3,616 ft.; will deepen.

Skelly Oil Co.'s No. 4 Coates, C SE SE sec. 3-24-36.
Set 7-in. casing 3,500 ft.

Stanolind Oil & Gas Co.'s No. 2 Meyer B, C NW NW sec. 11-24-36.
Drlg. 3,374 ft.

Jal Area

Harry Leonard's No. 1-B Justice, SW NW NW sec. 20-25-37.
T.D. 3,501 ft.; plugged back to 2,970 ft. for gas well; pulling 5 3/16-in. casing.

Stanolind Oil & Gas Co.'s No. 8-A Farnsworth, C NW NW sec. 18-26-37.
Set 7⅝-in. casing at 3,114 ft.

Phillips Pet. Co.'s No. 1 Woolworth, C SE SW sec. 8-25-37.
T.D. 3,441 ft.; tested 10 bbls. of fluid in 24 hours, 2 per cent water and 1,500,000 ft. of gas.

Byrd-Frost Inc.'s No. 3 Wells A, C SW NW Sec. 11-25-36.
Cellar and pits.

Texas Co.'s No. 1 Cagle B, C NW SW sec. 15-26-37.
Moving in material.

Maljamar Area

Maljamar Oil & Gas Co.'s No. 5 Baish, C SW NE sec. 21-17-32.
Drlg. 1,155 ft.

Eddy County

Emperor Oil Co.'s No. 2 Puckett, C W½ NW NE sec. 24-17-31.
Drlg. 2,055 ft.

Barnsdall Oil Co.'s No. 3 Dodd, C SE NE sec. 22-17-29.
Rigging up machine.

Fred Brainerd's No. 1 Featherstone, CEL SW SW sec. 25-16s-28e.
Drlg. 1,418 ft.

Dooley & Shank's No. 1 McClay, C NE SE sec. 33-18s-30e.
2,000 ft. sulfur water in hole at 3,556 ft.; abandoned.

Dooley et al's No. 1 Commerce Trust, NW NE SW sec. 8-20s-27e.
T.D. 1,065 ft., in sand; shut down.

Etz Bros.' No. 1 State, C SE SW sec. 16-17s-30e.
Drlg. 2,900 ft. (correction).

Getty Oil Co.'s No. 7 Dooley, SW SW NW sec. 24-20s-29e.
T.D. 6,671 ft.; swabbed 24 hrs., no fluid; 50,000 ft. of gas.

Red Lake Oil Co.'s No. 5 State, NW NW NE sec. 27-17s-28e.
Drlg. 1,141 ft.

Sandoval County

Continental Oil Co.'s No. 1 L-Ranch, 2,010 ft. from N and 330 ft. from E lines, sec 2-13-14w.
Drlg. 5,415 ft.

Chaves County

Comanche Drlg. Co.'s No. 2 Sloop-Purcell C NE NE sec. 15-11s-26.
Location.

Warman Oil Trust's No. 1 Weldon & Hoar, NW NW SE sec. 9-14-25.
T.D. 1,683 ft. in sand; P.B. to 1,395 ft.; S.D.

Lea County

Vierson & Brown's No. 1 Robbins, C NW SE sec. 14-11-32.
Drlg. 3,155 ft.

Shell Petroleum Co.'s No. 1 State-Endura, C NE NE sec. 24-21-35.
Set 12½-in. csg. 320 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norine Realty Co., Inc.'s No. 1 Gallegas grant, SE SW NW sec. 19-11n-4e.
S.D. 630 ft.

Harding County

Khasy et al's No. 1 DeBaca, C sec. 19-20n-31e.
Running 8¼-in. at 847 ft.; 10-in. at 250 ft. (first report).

McKinley County

Red Mountain Oil & Gas Co.'s No. 1, SW cor. section 21-20n-9w (Cooperative Oil & Gas Co.), Red Mountain district, an offset on the northeast to the discovery well, Bennett & Lingfelter's No. 1 Santa Fe, was plugged and abandoned at 540 feet. The discovery well in the NE cor. NW section 29-20-9w, was completed the past summer for 20 bbls. a day initial at 556 feet.

Forth & Hickerson's No. 2 Santa Fe, NE NW NE sec. 29-20n-9w.
Drlg. below 200 ft. (formerly Lark Drlg. Co.).

Montrose Oil & Gas Co.'s No. 1 State, NE NE sec. 28-20n-9w.
Drlg. 400 ft.; 6⅝-in. at 300 ft.; small show oil at 312 ft.

g Dysart et al's No. 1 Bouton, E NW NE sec. 14-4n-10w.
O.W.D.D.; resumed at 1,365 ft.

Quay County

Danube Drlg. Co.'s No. 1 Will Wallace, NE NE SE sec. 12-9n-32e.
T.D. 1,000 ft.; 10-in. cmtd. at 505 ft.; C.O. at 930 ft.

Quay County Dev. Co.'s No. 1 Wallace, SW SW SE sec. 19-9n-33e.
S.D. 816 ft.; rainbows at 814 ft.; show of salt water at 775 ft.

Rio Arriba County

El Vado Structure Properties Co., Ltd.'s No. 1-A Tierra Amarilla grant, NE sec. 26-3s-1e (unsurveyed).
S.D. Rig on loc.

Sandoval County

Continental Oil Co.'s No. 1 L-Bar Cattle Co., CEL SE NE sec. 2-13n-4w.
Drlg. 5,470 ft. in shale and lime.

San Juan County

Jack Amenda's No. 3, SW NW SW sec. 25-30n-12w.
Drlg. 400 ft.; 8¼-in. at 257 ft.; 10-in. at 40 ft. (first report).

Aztec Coop. Oil Co.'s No. 1 Greer, SE SE SW sec. 10-30n-11w.
S.D. 435 ft. for casing.

Continental Oil Co.'s No. 48 Rattlesnake, NE SE NE sec. 2-29n-19w.
Drlg. 195 ft. in shale (first report).

J. F. Cross et al's No. 1 Wilson, SW SW SE sec. 17-30-11w.
S.D. 810 ft.

Cross & Poole's No. 1 Aztec, sec. 1-30-11w.
Making water shutoff at 740 ft.

Kutz Canon O. & G. Co.'s No. 1 Day, SW SW SW sec. 20-28-10.
T.D. 4,400 ft.; fishing for tools.

R. C. Oswell's No. 4 Government, SW SW NE sec. 34-30-11w.
S.D. 1,790 ft.

R. C. Oswell's No. 6 Government, SE NE sec. 33-30-11w.
Spudded and S.D.

Reserve Oil Co.'s No. 6 Shaffer, SE NE SE sec. 36-22n-14w.
Location.

San Juan Pet. Co.'s No. 1 Lemley, NE SE SE sec. 32-30-11w.
S.D. 1,314 ft.

Southern Union Gas Co.'s No. 4 Government, C NW NE sec. 14-28n-11w.
Drlg. 50 ft.; 12½-in. at 20 ft.

Nick Suatter's No. 1 fee, C NE SW sec. 32-31-11w.
S.D. 1,745 ft. for pipe.

W. R. Webb's No. 2 fee, C NE NW sec. 6-30n-11w.
Location (first report).

San Miguel County

Cabra Springs O. & G. Co.'s No. 1 Thompson, SW NE NE sec. 22-12n-22e.
S.D. 4,067 ft.

Cabra Springs O. & G. Co.'s No. 2 West Pino Mesa, SW SW NW sec. 31-12-22.
S.D. 726 ft.

Pioneer Oil Co.'s No. 2 Montezuma, CSL SE SW sec. 14-15n-16.
Drlg. 300 ft.

Starr-Kennedy Oil Co.'s No. 3 Abrams, NE NE SE sec. 25-17-16.
Standing at 5,090 ft. after completing rig; to resume following fire.

Holmberg Interest's No. 1 Cantwell, NW NW SW sec. 5-10n-9e.
S.D. 810 ft. (corrected).

Kelsey Clients Dec. Est.'s No. 2 State, C NW sec. 22-10n-10e.
S.D. 1,450 ft.

Torrance County

48 Pet. Co.'s No. 1 Greenfield, C NW SW sec. 17-9-8e.
Drlg. 1,000 ft.

Bruce Fraier's No. 1 Graier, SE sec. 12-2n-3l.
Drlg. 1,210 ft. in granite wash water at 882-86 ft.

Quaker States Oil Co.'s No. 1 Zurich, NW SE SW sec. 2-21n-34e.
Spudding 110 ft. (first report).

Union County

Quaker States Oil Co.'s No. 1 Zurich, NW SE SW sec. 2-21n-34.
S.D. 100 ft. for water.

Sierra Grande Oil Corp.'s No. 2 Rogers, C NE NW sec. 4-29-20.
T.D. 2,715 ft. in granite.

Valencia County

Ringle Dev. Co.'s No. 2 Tome grant, C NE SE sec. 20-6n-3e.
Rigged and S.D.

Ringle Dev. Co.'s No. 1 Tome grant, C SE SE sec. 36-6n-3e.
S.D. 400 ft.

Western Natural Resources Corp.'s Inc.'s No. 2 San Clementer, SE SE NW sec. 5-6n-1e.
T.D. 6,001 ft.

Pres-Sel Dev. Co.'s No. 1 Toltec, NE SW SW sec. 30-12n-10w.
T.D. 280 ft.; fshg. for tools.

COLORADO

Adams County

Riddle Pet. Co.'s No. 1 Baxter, C SW Sec. 2-3s-6w.
S.D. at 700 ft. to enclose rig for winter operations.

Archuleta County

A new operation in the Chromo district to the southwest of the Price structure where the W. E. Hughes estate recently brought in a producer is reported in K. L. Kendrick's No. 1 Crowley, on unsurveyed land approximately in either the W half of section 1 or E half of section 2-32n-1e. Rig from the Navajo Oil Co.'s No. 1 Crowley, SW cor. NE Section 11-32n-1e, is reported being moved in by John A. Grant, contractor, who drilled the Navajo company's well. The latter was last reported shut down after encountering artesian water at 1,129-38 feet.

William E. Hughes Est.'s No. 3 fee (unsurveyed), approx. SE cor. NW Sec. 24-33n-2e, 40 ft. N and 440 ft. W of No. 2.
S.D. 1,100 ft. for engine repairs; show of oil at 1,070 ft.

William E. Hughes Est.'s No. 2 fee (unsurveyed); approx. SW Sec. 24-33n-2e.
Shut in at 1,120 ft. for pumping unit.

Oil City Pet. Co.'s No. 1-A Garnett, NW NE NW Sec. 25-33n-2e.

K. L. Kendrick's No. 1 Crowley (unsurveyed), Sec. 2-32-1e.
M.I.M. (first report).

Baca County

J. H. Everett et al's No. 1, 330 ft. NW cor. Sec. 24-32-48.
Spudded water well.

Boulder County

Leslie R. Steele et al's No. 1 Maxwell, SW NE NW Sec. 24-1n-71.
Drlg. 2,362 ft.

Elbert County

Ramsey Pet. Corp.'s No. 1, 200 ft. W of C Sec. 13-8s-57w.
Rig up.

Fremont County

Waterville Oil Co.'s No. 1 State, SE SE NW Sec. 16-18s-69w.
Landed 5 3/16-in. at 2,780 ft.; shut off show of oil and salt water and S.D. at 2,997 ft.

Grand County

Interstate O. & G. Co.'s No. 1 Hinman, NE NE NW Sec. 11-2n-81.
S.D. 2,997 ft.

Huerfano County

S. W. Pressey's No. 1 Ojo, SW NE Sec. 10-28-69.

Collins & Quinn's No. 1, C W½ E½ Sec 4-28s-68w.
S.D. 3,810 ft. for fshg. tools.

Jackson County

Colorado Oil Ref. Co.'s No. 1 North Park Coal, NW NW sec. 18-9n-78.
T.D. 1,805 ft.; fshg. for baller.

Continental Oil Co.'s No. 3 Hoyle, NW NW NE sec. 34-9n-78.
Drlg. 5,161 ft. in green shale.

Jefferson County

Ruby Hill O. & G. Co.'s No. 1 Braden, SE cor. sec. 24-4n-69.
S.D. 4,280 ft.

La Plata County

McGarr Pet. Co.'s No. 1 Pinon Mesa, CSL NE NE sec. 24-33n-12w.
S.D. 405 ft. (cor.).

Las Animas County

Mountain State Oil Corp.'s No. 1 Nickols, C NE NE SE sec. 10-34-62.
S.D. 1,640 ft.

Lincoln County

Consolidated Smelting & Metals Co.'s No. 1 Hancock, NE NE sec. 7-17s-52.
S.D. 1,780 ft. (cor.) for winter.

Moffat County

Stanolind O. & G. Co.'s No. 16-X Parkinson, 220 ft. W and 618 ft. of NE cor. Lot 5 (SW NW NW), sec. 23-4n-92w.
T.D. 3,432 ft.; W.O.C. 7-in. at 3,428 ft.; top of Sundance 3,425 ft.

Montezuma County

McElmo Oil Co.'s No. 1 West, NE NW NE sec. 21-26n-17w.
T.D. 3,705 ft.; fishing for tools.

Morgan County

Swisher et al's No. 1 Lunt, 92 ft. W of E line and 360 ft. N of S line, sec. 3-4n-60.
Drlg. 1,260 ft. in shale and grit; after S.D. for two days, first bailings showed fluid 30 per cent oil.

Park County

South Park Co.'s No. 1 State, SE SE SW sec. 16-11s-75w.
T.D. 3,658 ft.; straightening crooked hole.

South Park Oil Co.'s No. 1 Lebert, NE NE NW sec. 21-11s-75w.
Location (first report).

Prowers County

Trojan O. & G. Co.'s No. 1 Lotus Oil, NW NE NE sec. 15-23-4n.
Reported running 4½-in. at around 5,800 ft.

Routt County

Mid-Colo. Pet. Co.'s No. 1 Omhalt, NE NE SE sec. 29-4n-87w.
Drlg. 2,820 ft. near base Lakota in hard sand showing some oil; no water.

Washington County

Fremont Buttes Oil Co.'s No. 1 Gilcrest, SW SE SW sec. 22-3n-53w.
S.D. 260 ft.; 16½-in. at 137 ft.

WYOMING

Albany County

California Co.'s No. 2 Hoist, SW NE SE sec. 13-17n-77.
S.D. 4,085 ft. to repair boilers.

California Co.'s No. 1 Wilson, NW SW SW sec. 18-17n-76.
S.D. 1,010 ft. (cor.) for water.

Ohio Oil Co.'s No. 1 Emery, C SE NE sec. 30-15n-75w.
S.D.O. 2,579 ft.; probably abd.; water in Tensleep.

Big Horn County

J. W. Bales' No. 1 Parker, C SW SW sec. 23-4-89.
Drlg. 600 ft.; carrying 6 3/16-in.

Peter Evanoff et al's No. 1 McAllister, Lot 40, NW NE SE sec. 3-55n-97w.
Drlg. 2,050 ft. (cor.).

Joan Oil Co.'s No. 1 Howell, NW SE NE Lot 63, sec. 32-55n-97.
S.D. 1,190 ft. (cor.).

Kinney-Coastal Oil Co.'s No. 3 Government, SW NW NE sec. 24-56n-98w.
T.D. 4,234 ft.; set whipstock at 4,050 ft.

W. S. Gilbert's No. 1 Zaring, SE SE SE sec. 35-52n-93w.
Drlg. 1,000 ft.

Ohio Oil Co.'s No. 4 Byron Union, SW SW NE sec. 22-56-97.
Drlg. 1,945 ft.

Ohio Oil Co.'s No. 3 Sessions, NW NW NW sec. 33-56n-97w.
T.D. 4,234 ft. in sat. Madison lime; running 7-in. to 3,925 ft.

Ohio Oil Co.'s No. 1 Lindsay, SW SW NE sec. 23-56n-97w.
Digging cellar (first report).

Montana-Wyoming Oil Co.'s No. 1 Allen, 210 ft. from N line, 936 ft. from E line, Lot 52 (SE NW SE), sec. 32-56n-97w.
T.D. 4,050 ft.; fshg. drill pipe.

Peay Oil Co.'s No. 2 Government, SE SE SE sec. 10-55n-97w4.
Rig (cor.); S.D. indef.

Peay Oil Co.'s No. 1 Denio, Tract 43-C, sec. 15-55n-97w.
S.D. 3,400 ft.

J. H. Shaffer's No. 1 Keachie, C SW SW sec. 7-49-91.
T.D. 1,350 ft.; U.R. 6⅝-in.

W. O. Taylor et al's No. 1 Hoskins, Lot 5, (SE SE) sec. 25-56n-97w.
Resumed at 5,275 ft.; will set whipstock and drill by 450 ft. of drill stem.

LARKIN SAND PUMPS

Clean out faster than any other pump on the market!

For getting the sediment, cavings, sand and iron drillings all out of the well quickly—Larkin Sand Pumps have no equal!

All the parts are made with gauges; this allows the rapid and accurate replacing of worn-out parts without the expense of shop work. And all parts can be replaced right on the location!

Sand Pumps are made in either the Wire-Line Plunger or the Steel Plunger type. We point out, however, that a longer stroke may be had with no higher derrick, when the Wire-Line Plunger Pump is used.

Bit Bottom

See Composite Catalog of Oil Field Equipment, Pages 542 and 543.

At All Supply Stores
Warehouse stock at Houston, Texas, Tulsa, Oklahoma, and in East Texas.

LARKIN PACKER CO.
ST. LOUIS, MO.

Wyoming O. & R. Co.'s No. 1 Evans, NE NE SW sec. 12-49-91.
Set 1½-in. at 85 ft. (cor.) and S.D.

Carbon County

Ohio Oil Co.'s No. 5 Diamond Cattle, NW SW NW section 35-20-78, Rock River field, was completed in the upper Sundance at 3,217 feet after plugging back from 3,262 feet and swabbed 180 bbls. first 24 hours. Lower Sundance had water. It is an offset on the northwest to No. 4 Diamond Cattle which had water in the Sundance. Both wells were old wells drilled deeper from the Dakota.

Ohio Oil Co. and California Co.'s No. 2 State, C NW NW sec. 36-21n-79w.
Coring in heavily saturated lower Sundance at 5,698 ft.; top at 5,640 ft.
Ohio Oil Co. and California Co.'s No. 1 Union Pacific, Acct. J, NE SW NW sec. 25-21-79w.
Drlg. 4,100 ft. in Frontier.
General Pet. Corp.'s No. 1 Whitford, SW SE SE sec. 24-20-84.
T.D. 5,500 ft.; cmtd. 8⅝-in. on bottom.
General Pet. Corp.'s No. 1 Union Pacific, C SW SW sec. 19-20-82.
S.D. 5,931 ft.; may be deepened.
Sinclair-Wyoming Oil Co.'s No. 9 Wertz, NE NW NW sec. 7-26n-89w.
Drlg. 2,652 ft
Shirley-Wyoming Oil Co.'s No. 1 Government, NW NE sec. 2-26n-80w.
Drlg. 821 ft.
Union Oil Co. of Calif. and Mutual Oil Synd.'s No. 1 Union Pacific, NE SW SE sec. 1-18-78w.
T.D. 561 ft.; cmtd. 12½-in. at 135 ft.

Converse County

Chadron-Osage Oil Co.'s No. 1 State, SW cor. sec. 16-32-69.
Set 12¼-in. on bottom at 1,480 ft. and S.D.
Chadron-Osage Oil Co.'s No. 1-X, SW NE sec. 27-32n-69w.
Drlg. 400 ft. for gas for deep test (first report).
Continental Oil Co.'s No. 60 State, NW SW NE sec. 9-33-76.
Drlg. 5,616 ft. in red beds.
Otto Olson et al's No. 1 Carey, sec. 6-32-71.
S.D. 642 ft.
John Ackard's No. 1 Daniels, SW SW SE sec. 17-32-71.
Drlg. 3,000 ft.

Fremont County

Mid-American Oil Co.'s No. 3 Government, NW NE SW sec. 14-28-92.
Drlg. 1,750 ft.
Nelson & Poupiert's No. 2 Enos, Lot 7, sec. 27-3n-1w.
Drlg. 1,100 ft.; showing for 1 bbl. of oil.

Hot Springs County

California Exploration Co.'s No. 2 Government, NW SW NW sec. 7-44-96.
T.D. 4,235 ft.; mixing mud.
Ohio Oil Co.'s No. 72 Millsiron Cattle Co., NE SE SE Sec. 19-46n-98w.
Drlg. 3,410 ft. in red beds.
Stanolind O. & G. Co.'s No. 20 State-Ridgely, SE NE SE sec. 19-46n-98w.
S.D.; derrick.

Lincoln County

Senrab Oil Co.'s No. 2 Government, N SE NW sec. 10-26-113.
T.D. 1,020 ft.; recmtd. 5 3/16-in. at 1,012 ft.
Superior-Wyoming Oil Co.'s No. 2-B, Lot 3 (NW NW), sec. 3-26-113w.
S.D. 890 ft.

Niobrara County

One of the best completions so far made in the Sundance in the Lance Creek field was the Continental Oil Co.'s No. 3 Joss, E NW NE section 6-35-65, which made 2,833 bbls. of oil and 1,900,000 feet of gas in 24 hours at a total depth of 3,937 feet. It showed 100 pounds pressure on the tubing and 675 pounds on the casing. The lower Sundance was at 3,845-3,929 feet and the top of the red beds at 3,929 feet. The elevation is 4,405 feet. It is a west offset to the Argo Oil Co.'s No. 3 Elliott.

Black Hills Ref. Co.'s No. 1 Wyrick, C SW NE sec. 23-34n-64w.
Derrick; W.O. rotary.
Black Hills Ref. Co.'s No. 1 Mills Est., C SE NW sec. 27-34n-64w.
Location.
J. H. Huber Co.'s No. 1 Joss, NE SE NW sec. 6-35n-65w.
T.D. 4,095 ft.; tools recovered; will plug off bottom water and complete.
Interstate O. & R. Co.'s No. 1 Morrell, NW NE SE sec. 9-19-51.
T.D. 2,930 ft.; P.B. to 2,835 ft.; S.D.
Fall River Royalty & Producers Co.'s No. 5-L Briggs, CSL NE NE sec. 2-39n-61w.
Drlg. 385 ft.
S. & H. Dev. Co.'s No. 1-A Olinger, SE NE NW sec. 1-36-63.
T.D. 1,674 ft.; R.U. to pull and reset 5 3/16-in. at 1,650 ft. to S.D. Dakota water and test show in Lakota.
Ohio Oil Co.'s No. 5 Converse Sheep, C SE SW sec. 32-36-65w.
Rig up.
Ohio Oil Co.'s No. 7 Lamb, C NW NE sec. 5-35n-65w.
Drlg. 3,139 ft.
Riggs Drlg. Co.'s No. 2 Spaugh Land & Livestock, SW SW SW sec. 32-34n-65w.
M.I. rig; (first report).

Park County

Continental Oil Co.'s No. 4 Northern Pacific, NW NE SE sec. 23-58n-98w.
Location.
Geo. T. Beck's No. 1 fee, NW SE NW sec. 27-33-101.
Drlg. 1,640 ft.
Garland Oil Co.'s No. 2 Government, SE NE NW sec. 14-56-98.
S.D. 2,160 ft.
Resolute Oil Co.'s No. 1 State, C SW SW sec. 16-57-101.
S.D. 3,608 ft.

Sheridan County

Beaver Creek Oil Synd.'s No. 1 Allison, SW SE Sec. 15-55-85.
S.D. for the winter at 2,865 ft.

Sublet County

Texas Co.'s No. 3-C SE cor. NW section 34-27-113, La Barge field, was completed at 914 feet for 60 bbls. a day on the pump. Sands were at 890-912 feet and 790-802 feet.

Pines-LaBarge Oil Co.'s No. 2 Government, CEL NE NW sec. 18-27-113.
S.D. 520 ft.

Sweetwater County

Mountain Fuel Supply Co.'s No. 1 Brooks, C NW NE sec. 15-16n-104w.
Drlg. 1,023 ft.
Vermillion Oil Co.'s No. 1 Government, SW SW SW sec. 7-12n-98w.
Mat. on ground; S.D. until spring.
Sinclair-Wyoming Oil Co.'s No. 6 U.S.P., SW SW NW sec. 11-26n-90w.
S.D. 2,330 ft.

Uinta County

Druscilla Connell et al's No. 5 Government, SW NW NW sec. 24-15n-118w.
Drlg. 1,036 ft.
Intermountain Pet. Corp. of Utah's No. 1 Union Pacific-Hayes, SW NW SW sec. 24-19n-113w.
Drlg. 1,550 ft.
W. D. Marshall's No. 1 Government, NW SW SE sec. 12-15n-118w.
Drlg. 750 ft.; 8¼-in. at 425 ft.
Ragan Pet. Co.'s No. 4, NW SW NW sec. 13-15n-118w.
Drlg. 1,018 ft.

Washakie County

Ariton & Doyle's No. 1 Government SW SW SE sec. 29-48-91w.
Drlg. 850 ft.
Christenson & Thorne's No. 2 Government, NW SW SW sec. 31-48-90.
Drlg. 100 ft.; 10-in. at 85 ft.
Wyoming O. & R. Co.'s No. 1 Frison, NW SW NW sec. 14-48-91.
S.D. 1,710 ft.

Weston County

R. L. Rose's No. 4, SW SE SW section 8-46-63, Osage field, was completed as a 12-bbl. shale well at 200 feet. It is a first report.

Conway Oil Corp.'s No. 1 Government, C SE NW sec. 7-41-60.
Drlg. 2,235 ft.
Des Moines-Osage Synd.'s No. 11, CNL NE NE sec. 25-46n-64w.
Topped sand at 1,419 ft.; 300 ft. of oil over night; will case and complete.
Federal Oil Co.'s No. 3 Government, C NE SE sec. 15-46-64w.
Drlg. 1,800 ft.
Beaver Creek Oil Synd.'s No. 1 State, C NE NE sec. 23-44-63.
Spudded and S.D.
Glenn Taylor's No. 1 Bock, C SW NE sec. 2-45n-62w.
Lowering 8¼-in. to 400 ft.
L. C. Packman's No. 1, NW NW NW sec. 19-46n-63w.
Resumed at 450 ft.; R.U. to run 8⅛-in. to bottom.
Grytler Holm's No. 1 Apostal, NW SE SW sec. 4-46n-63w.
S.D. 140 ft.
Osage Trust Co.'s No. 4, SE SW SE sec. 8-46n-62w.
Spudding 60 ft.; (first report).
Henry Egert's No. 2, SW NE SE sec. 8-46n-62w.
Rig on location; (first report).

MONTANA

Big Horn County

Big Horn O. & G. Co.'s No. 24, NW NE NE sec. 26-1s-33e.
Drlg. 595 ft.; (first report).
Daniels Pet. Co.'s No. 1 May, C SE SE sec. 13-1s-32e.
Drlg. 2,900 ft.; carrying 6¼-in.
Enterprise Oil Co. et al's No. 2 Lynde, SW SW SE sec. 21-6n-35e.
S.D. 3,590 ft.

Carbon County

Bailey Round Butte Oil Co.'s No. 1, 1,120 ft. W of E line and 2,140 ft. N of S line, sec. 3-6s-22.
Drlg. 1,475 ft.

Cascade County

C. Leonard Smith's No. 1, NE NE SW sec. 14-22n-2l.
S.D. 13 ft.

Chotcau County

Mills & Decker's No. 1, NE NW sec. 29-27n-13e.
Rig up.

Fallon County

Montana-Dakota Utilities Co.'s No. 1, NE NW sec. 17-3n-62e.
Coring 4,825 ft. in red beds.

Fergus County

Button Butte O. & G. Co.'s No. 1 Woodward, SE SE SW sec. 20-14n-24.
S.D. 3,095 ft.
Kalispel-Kevin Oil Co.'s No. 1 Emmons, 220 ft. W of E line and 2,140 ft. N of S line, sec. 6-20-18.
Drlg. 2,250 ft.
S. W. Pennock et al's No. 1 Nordheim NW NE NE sec. 6-21n-18e.
S.D. 480 ft.; (corrected).
H. C. Rowland et al's No. 1, NE NW NW sec. 13-17n-23e.
Drlg. 625 ft.; (first report).
E. A. Fenholt's No. 1, NW NW SW sec. 24-21n-17e.
Rigging up.
Judith Operating Co.'s No. 1 Government, C SW SW sec. 26-22n-17e.
Drlg. 700 ft.

Gallatin County

Montana Gas & Pet. Corp.'s No. 1 Adams, SE SE SE sec. 36-2n-1e.
S.D. 2,400 ft.
Ben W. Ryan's No. 1 Tice, NE NE NE sec. 28-1n-2e.
Drlg. 2,576 ft.

Glacier County

Two wells were completed in the Cut Bank Field. The Consolidated Gas Co.'s No. 10 Tribal, SW cor. NE section 34-35-6w, swabbed 125 bbls. first 24 hours at a total depth of 2,984 feet from the pay at 2,930-74 feet. R. C. Tarrant's No. 3 Getty, NW cor. SE section 2-34-6w, swabbed 160 bbls. first 24 hours at a total depth of 2,865 feet from the pay at 2,830-60 feet.

A. B. Cobb's No. 5 Walberger, C NE NE sec. 35-35n-6w.
Rig.
Cobb-Pardee's No. 1 Morrison, 1,980 ft. S of N line and 75 ft. E of W line sec. 24-33n-6w.
Drlg. 2,610 ft.
Consolidated Gas Co.'s No. 1 Simero, C NE SE sec. 1-33n-6w.
Drlg. 2,660 ft.
Lon Crumley's No. 2 Jones, C NE SW sec. 21-34n-5w.
Spudding 250 ft.
Fowler et al's No. 1 Tweedy, SW SE SE sec. 35-33-6w.
Drlg. 2,525 ft.
R. C. Jeffries' No. 4 Lukens, NE NE NE sec. 12-33n-6w.
W.O.C.; 10-in. at 530 ft.
R. C. Tarrant's No. 1 Thacker Bond & Mtg., SE SW NW sec. 27-32-5w.
S.D. 2,535 ft.
Montana Power Gas Co.'s No. 1 Connolly, NW cor. sec. 7-33n-5w.
Drlg. 2,575 ft.
Montana Power Gas Co.'s No. 2 Peterson, 1,000 ft. E of W line and 2,640 ft. S of N line, sec. 30-35n-5w.
Top Colo. 385 ft.; ;running 10-in. at 475 ft.
Montana Power Gas Co.'s No. 1 Rigney, C NW NE sec. 2-35n-6w.
Drlg. 2,650 ft.
P. M. K. Pet. Co.'s No. 2 Haglund, Sr., NW NW NE sec. 14-35n-6w.
Drlg. 2,525 ft.
Royalite Co.'s No. 1 Hagen, NW SW sec. 4-31n-7w.
Location (first report).
McCabe & Jeffries' No. 2 Government, SW NE SE sec. 32-35n-5w.
Drlg. 2,830 ft.
Santa Rita O. & G. Co.'s No. 1 Lander, C N half SE sec. 16-35n-6w.
Cmtd. 10-in. at 350 ft. with 140 sacks; W.O.C.
Santa Rita O. & G. Co.'s No. 1 Shearon, 660 ft. S of N line and 348 ft. W of E line, sec. 34-36n-6w.
Bldg. rig.
Santa Rita O. & G. Co.'s No. 1 Jacbson, C NE SW sec. 8-32n-5w.
Drlg. plug; 7-in. at 2,841 ft.
Santa Rita O. & G. Co.'s No. 6 Tribal, C S half SE sec. 16-35n-6w.
Spud. and S.D.
R. C. Tarrant's No. 4 Miller, 100 ft. N of C SE NE sec. 24-34-6w.
Drlg. 1,660 ft.
R. C. Tarrant's No. 2 Hope, NW SW SW sec. 18-34-6w.
Colo. at 412 ft.; 10-in. at 440 ft.; W.O.C.
R. C. Tarrant's No. 6 Britton, C SE SW sec. 12-34n-6w.
Rig on location (first report).
R. C. Tarrant's No. 1 Williams, C SE NE sec. 11-34n-6w.
Drlg. 1,640 ft.
R. C. Tarrant's No. 2 Jones, NW NW SW sec. 31-34n-5w.
Rigged.
Yukon Oil Co.'s No. 1 Federal Land Bank, 440 ft. N and 660 ftW of SE SW sec. 11-34n-6w.
Location.

Liberty County

Western Natural Gas Co.'s No. 1 Wallace, C SW NW sec. 15-37n-4e.
Drlg. 1,240 ft.

Park County

Ben W. Ryan et al's No. 1, NE sec. 23-2n-11w.
Ready to spud.

Petroleum County

H. H. Schwtr's No. 7 Government, NE SW SW sec. 11-15n-29e.
T.D. 1,450 ft.; P.B. to 1,350 ft.

Pondera County

Dave Mills' No. 1 Erickson, SW SW SW sec. 3-27n-4w.
Drlg. 510 ft.; 10-in. at 507 ft.
Texas Co.'s No. 1 Unit 2, NE SW NW sec. 21-30n-5w.
Spudding at 245 ft.

Phillips County

Little Rocky Dev. Co.'s No. 1, SE SE SE sec. 17-24-24.
S.D. to finance at 352 ft.
Phillips Dev. Co.'s No. 6 Government, NW SW sec. 2-24n-24e.
S.D. 659 ft.; show gas at 568-604 ft.; water at 650-59 ft.

Toole County

Carscallen & Mitchener's No. 1 Greuger, C S half NE sec. 10-34n-2w.
Drlg. 1,553 ft.; top Ellis-Madison 1,550 ft.
Cassidy and Cassidy's No. 1 Veitch, 220 ft. W of E line, 660 ft. N of S line, sec. 31-35-2w.
S.D. 1,630 ft.
Cassidy & Crumley's No. 1 Carlson, sec. 22-35n-3w.
Drlg. 1,500 ft. (first report).
Coolidge & Coolidge's No. 4 O'Hara, NE NE SE sec. 35-36n-2w.
Drlg. 1,450 ft.
A. E. Crumley's No. 8 Shaw, SE NW SE Sec. 35-36n-2w.
Rig (first report).
Huso Brothers' No. 3 Government, SW NE SE sec. 14-35n-3w.
Drlg. 1,185 ft.
Fred R. Munger's No. 1 Government, SW NE NW sec. 13-35-2w.
S.D. 1,492 ft.
W. M. Hanlon's No. 2, SW NW SE Sec. 27-35n-3w.
T.D. 1,712 ft.; acidized and C.O.
Wm. McKnight's No. 2 Seabrook, SW NW SW sec. 19-35n-2w.
Drlg. 1,225 ft.
Nepsted - Montgomery - Farther's No. 1 Haugen, NE NW NE sec. 11-35n-3w.
Drlg. 1,560 ft.
Nepsted - Montgomery - Farther's No. 1 Grass, 660 ft. W of E line and 220 ft. N of S line, sec. 17-35n-1w.
Rigging.
Ohio Oil Co.'s No. 8 Reeg, NW NW SW Sec. 14-35n-2w.
Rigged.
Pfabe & Engleking's No. 10 Government, SW SW SE sec. 19-35n-2w.
T.D. 1,511 ft.; Ellis-Madison at 1,509 ft.; dry; will acidize.
E. O. Reickhoff's No. 2 Government, SW SW NE sec. 3-35-3w.
S.D. 1,034 ft.
Stock Brother's No. 3 Haggerty, NW SW SW sec. 13-35n-2w.
S.D. 1,524 ft.
R. C. White's No. 1 Haugen, NE NE SE sec. 11-35-3w.
Drlg. 1,545 ft.
C. Leonard Smith's No. 1 Eckhoff, C SE sec. 6-33n-2e.
S.D. 575 ft. ..
C. Leonard Smith's No. 1 Federal Land Bank, C NE NE sec. 11-33n-1e.
Spudding at 175 ft.
C. Leonard Smith's No. 1 I. Halverson, C NE SE sec. 18-33n-2e.
S.D. 730 ft.; tested 500,000 ft. of gas at 720 ft.
C. Leonard Smith's No. 1 H. Halverson, NW NE sec. 18-33n-2e.
Drlg. 560 ft.

UTAH

Grand County

Columbia Crude Co.'s No. 1 Rath, SW SE sec. 12-25s-20e.
T.D. 80 ft.; filled back to 20 ft. to straighten.
Utah Southern Oil Co.'s No. 1 Hyde, SE NW NW sec. 33-22n-22e.
Drlg. 731 ft.
Glenn Ruby et al's No. 1 State, NE SE SE sec. 34-21s-16e.
Drlg. 478 ft. (formerly Norden Corp.).

Summit County

Longwell Pet. Co.'s No. 1, SE SW SE sec. 35-2n-5e.
S.D. 1,210 ft.

Utah County

Diamond Oil Co.'s No. 4 Government, CSL SE NW sec. 16-8s-5e.
Drlg. 3,847 ft. (cor.).

Washington County

Arrowhead Pet. Co.'s No. 2 Escalante, NW NW NE sec. 19-43-15.
T.D. 4,114 ft.; P.B. to 3,250 ft.; shot and C.O.
Arrowhead Pet. Co.'s No. 1-A, SE SW NE sec. 1-43-15.
Drlg. by lost tools cmtd. off at 2,070 ft.
Anna V. Toney's No. 1 Toney, CNL NE SE sec. 33-40s-11w.
Drlg. 370 ft. (first report).
W. W. Toney's No. 1 Government, CNL SE SW sec. 18-41s-12w.
Drlg. 185 ft. (first report).

4-SOUND REASONS
for using
T-I-W CHRISTIAN BITS

1: Has long shank to insure straight hole.
2: Affords pressure-on-bottom advantages of short bit.
3: Oval shaped body builds better side walls faster.
4: Design of body minimizes bailing up in sticky formations.

Every bit honestly and correctly dressed. Excellent field service. Your business solicited.

TEXAS IRON WORKS
1401-1423 Maury St. • HOUSTON, TEXAS

Among Gulf Coast Drilling Contractors

J. E. Hooper has spudded No. 1-B Swilley on the Sheldon prospect, Harris County, and has rig up for No. 1-A Swilley, both being drilled for A. C. Hill. In San Jacinto County he is preparing to spud No. 1 R. B. Love for himself which is a wildcat test in the Drury McGee Survey.

George Echols has moved in another rig over Westgate Oil Co.'s No. 1 Henderson and Pickering in the Placedo field, which blew out last week and caught fire, and is coring below 4,750 feet on Sun Oil Co.'s No. 1 Schneider in the same field. For the Sun company at the Sinton field, he has two rigs running and at the Gillis field, Calcasieu Parish, Louisiana, he is nearing the deep pay on No. 8 Castle for Fohs Oil Co.

L. W. Capps has three rigs running as follows: One on a wildcat test near the town of Edna in Jackson County for L. A. Douglass, one for J. K. Lewis on the Locke-Moore lease in Jefferson Davis Parish and one at Port Lavaca for the Crown Central Oil Co.

Smith and McDannald have finished No. 1 Smedes as the discovery well of a new field for Tide Water Oil Co. on the St. Martinsville prospect in St. Martin Parish and a rig is being moved southwest for No. 2 Smedes. The discovery well was completed at 5,582 feet for an initial production of 11 bbls. per hour. For Stanolind Oil & Gas Co. at the South Houston field, No. 1 Meaderbrook has been abandoned. At Big Hill for the same company, two tests have drilled through heaving shale and are scheduled to be completed this week.

W. V. Bowles is rigging up for No. 2 Hooks for Texas Co. at the Batson field, Hardin County, after completing No. 1 for a good producer.

Ben (Bud) Coyle has spudded No. 1 Lutcher-Moore for Pan American Producing Co. located on a wildcat prospect in Cameron Parish, Louisiana, and has rigged up No. 1 Hass and Hirsch for the same company in the Port Barre field in St. Landry Parish.

Edwards Drilling Co. has sidetracked No. 2 Shelor at Dickinson for Pure Oil Co. at 8,092 feet and has another sidetracking job on Jefferson Lake Oil Co.'s No. 1 State, a wildcat test in Iberia Parish. It was drilled to 8,545 feet and has been plugged back to 7,800 feet. At Anahuac No. 1 Mitchell has been spudded for the Domestic Exploration Co. located on the west side of the field.

Reading from left to right: J. L. Kirkpatrick, superintendent for the Tide Water Oil Co., and Cleaves McDannald, son of A. T. McDannald of Smith and McDannald drilling contractors of Houston, taken on location at Tide Water Oil Co.'s No. 1 Smedes which opened a field near St. Martinsville, in St. Martin Parish, Louisiana

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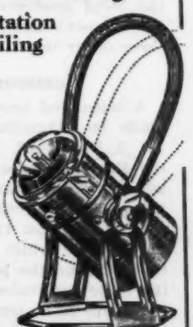

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Texas and Louisiana Gulf

TESTS INDICATE NEW FIELDS IN TWO LOUISIANA DISTRICTS

By
F. L. SINGLETON

HOUSTON, Tex., No. 18.—Tide Water Oil Co.'s No. 1 Smedes, on the St. Martinsville prospect, St. Martin Parish, definitely assured a new oil field when it flowed at the rate of 40 bbls. per hour through open tubing and casing with tubing pressure 1,900 pounds and casing pressure 2,030 pounds. It was allowed to flow for a few hours and was then placed on a three-eighths inch choke and is now flowing at the rate of 8 bbls. per hour with tubing pressure 1,970 pounds and casing pressure 2,090 pounds. It is estimated to be making an estimated 6,640,000 feet of gas daily.

Production is from the Florida Miocene sand cored from 5,551-79 feet and bottomed at 5,582 feet. The company is building roadway for No. 2 Smedes, 660 feet south and 660 feet west of the NW cor. of section 57-11s-6e. The field is in the southern part of the parish, midway between the New Iberia field and Anse La Butte fields in an area which has been looked upon as a favorable prospect for a number of years. Nine dry holes have been drilled by numerous companies, the deepest by E. V. Hopkins and others to the northwest, which was abandoned at 7,963 feet. It is reported six blocks are being taken in St. Martin and Lafayette, the adjoining parish.

Tepetate Field

The Tepetate field, Acadia Parish, was extended northwest by completion of Continental Oil Co.'s No. 1 Homeseeker's Development in section 29-7s-2w. It was drilled to 8,800 feet and after testing oil, gas and salt water on several drill-stem tests, was plugged back to the main pay at 8,314 feet, where it was completed through perforated casing from 8,305-8,312 feet for an initial production of 672 bbls. per day through a three-eighths inch choke with tubing pressure 2,400 pounds. This makes the third producer in the field and the company has started drilling on three other tests.

Cameron Parish

A scheduled production test to be made on Magnolia Petroleum Co.'s No. 1 Broussard, a wildcat test in the Big Lake area in Cameron Parish, has been delayed due to a fishing job which resulted after the operators had lost the measuring line in the hole while making a survey to determine the portion of the casing to be perforated. Six possible oil sands are to be tested, the test to be made below 9,200 feet. The well is on a block of 17,000 acres in section 13-12-9w.

Rapides Wildcat

Indications of a new field was made at Amerada Petroleum Corp.'s No. 1 Weil, a wildcat on the Conroe trend in Rapides parish in section 63-1s-2e. After showing salt water last week on a drill-stem test from 6,718-34 feet, it was plugged back to 5,725 feet and on a drill-stem test made through perforated casing from 5,705-10 feet the well started flowing through the casing and is now being killed preparatory to pulling the drill stem. The showing was made in the Cockfield sand and has attracted much attention.

Superior Oil Producing Co. added a producer to the recently discovered deep sand by completion of No. 1 C. B. Hernandez in section 34-8s-3e. It was originally completed at 8,659 feet but was deepened to 9,041 feet, where it was completed through perforated liner from 8,940-50 feet for an initial production of 75 bbls. in 24 hours through a 10/64-inch choke with tubing pressure 1,700 pounds. On the west side of the field, the company's No. 11 Larcade, in section 35, is bottomed in oil sand at 8,695 feet and is running casing preparatory to testing.

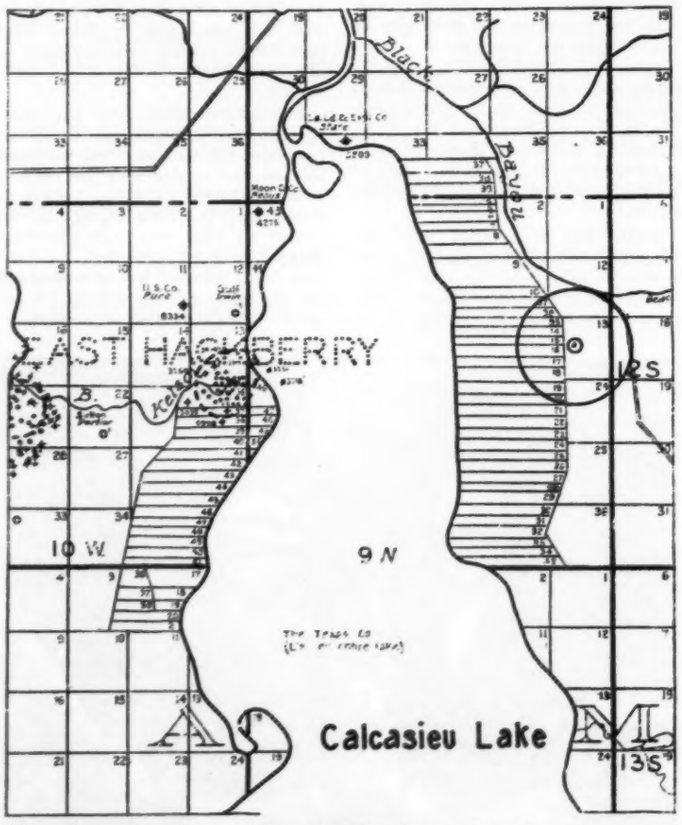
At the Gillis field, Calcasieu Parish, Fohs Oil Co.'s No. 8 Castle in section 14-9s-8w is flowing 450 bbls. of fluid per day of which 85 per cent is oil and 15 per cent wash water. It is still cleaning itself and flowing from oil sand at 7,037-55 feet, total depth. This is the ninth producer in the 7,000-foot sand. The company's No. 3 Castle, completed in a shallow sand from 5,178-78 feet, continues to increase in salt water content and is making 25 per cent salt water, with 155 bbls. of net oil per day with 1,800 pounds of tubing pressure.

In the northern part of St. Martin Parish, Texas Co.'s No. 1 State-Lake Mongoulais in section 10-10s-7e has attracted much attention due to an electrical coring test made at 5,835 feet, the total depth, which showed 20 ohms resistance from 5,811-35 feet. Casing will probably be cemented for a production test.

Harris County

The most important development along the Texas Coast was at the South Houston field, Harris County, where Stanolind Oil & Gas Co.'s No. 1 in Drilling District No. 10 proved the field a salt dome by topping the salt at 4,662 feet and is preparing to core in the same formation at 4,794 feet. Southwest in Drilling District No. 17, discovery well, encountered the salt at 5,960 feet and is preparing to make an electrical coring test at 6,050 feet, total depth. The latter test is only about 1,000 feet southwest which makes a dip in this formation of about 1,300 feet. Until more deep tests are drilled, it will be almost impossible to outline the structure of the dome. The extreme northwestern limits were defined by abandonment of Stanolind Oil & Gas Co.'s No. 1 Meaderbrook which cored salt water sand at 6,171 feet. Location is in the Callahan and Vince Survey.

The field was extended northwest by completion of Stanolind Oil & Gas Co.'s No. 1 Drilling District No. 5, completed at 3,862 feet for an initial production of 359 bbls. per day through a one-quarter inch choke, with tubing pressure 500 pounds and casing pressure 615 pounds. North of District No. 9 in District No. 8 the company is preparing to complete No. 1 at 3,927 feet. Seven and five-eighths inch casing was cemented at 3,904 feet.



Map shows location of Magnolia Petroleum Co.'s No. 1 Broussard. Big Lake area, Cameron Parish, Louisiana, which is preparing to make a production test in sand bottomed at 9,499 feet

(Map courtesy of W. W. Zingery, Esperson Building, Houston, Tex.)

Cotton Lake

Salt Dome-Gem Oil Co.'s No. 1 Lawrence, on the Cotton Lake prospect, Chambers County, has been abandoned at 7,055 feet. This was one of the most interesting tests ever drilled on the coast. It is in the James Grant Survey. Due to the number of oil showings encountered from 6,555-64, 6,631-35 and 6,769-74 feet it is expected to lead to more wildcatting.

Anahuac

On the west side of the Anahuac field, Chambers County, Humble Oil & Refining Co.'s No. 7 Middleton, section 56, topped the sand at 7,110 feet and is preparing to test at a total depth of 7,114 feet. Seven-inch casing was cemented at 7,094 feet. In the northern part of the field in the James McGahey Survey, the company's No. 3 White topped the sand at 6,993 feet and was completed at 7,077 feet, for an initial production of 26 bbls. per hour through a one-quarter inch choke with tubing pressure of 1,100 pounds and casing pressure of 1,200 pounds. Seven new locations were announced by Humble Oil & Refining Co. No. 7 Broussard was made in section 63; No. 8 Broussard, same section; Nos. 8 and 9 Clark, section 57; Nos. 11 and 12 Middleton, section 58; No. 2 Zappe, section 51, and No. 5 White in the James McGahey Survey.

The second well completed in the 9,100-foot sand was Humble Oil & Refining Co.'s No. 1 Anderson, completed at 9,127 feet for an initial production of 17 bbls. per hour through a one-quarter inch choke with tubing

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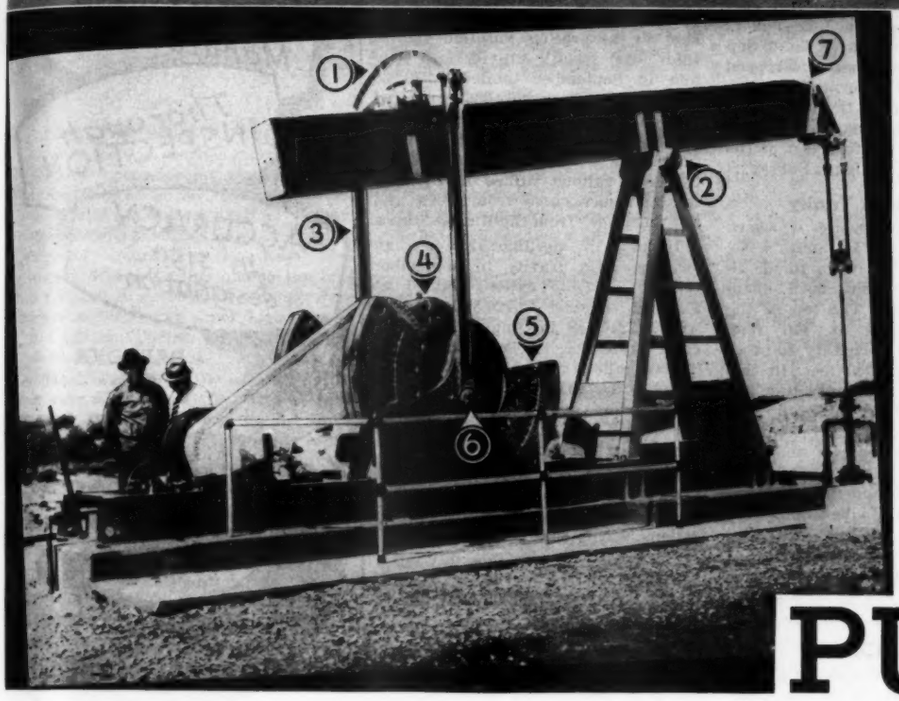

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pressure 2,950 pounds and casing pressure 3,250 pounds. It is a north offset to the company's No. 1 Danileson, producing from 9,140 feet. The third producer from this sand looms at the company's No. 1-B Bayou Development Co. which topped the oil sand at 9,116 feet and is coring in sand below 9,125 feet. If a well, it will extend production a considerable distance west, being 500 feet south of the south bank of the lake and 600 feet east of the west line of the John Sellers Survey. At the company's No. 1 San Leon Farm Co. oil sand was topped at 7,995 feet and it is coring in broken sand below 8,010 feet. It is 1,300 feet north of the north bank of the Dickinson Bayou and 100 feet east of the east line of the J. S. Jones Survey.

Houston and Trinity

Twelve miles southwest of Crockett, Houston County, A. H. Smith's No. 1 Smith Brothers estate in the J. H. Cummings Survey has been abandoned at 1,801 feet. The top of the Sparta was topped at 440 feet, Weches 680 feet, Queen City 800 feet and top of Carrizo 930 feet. In this same area but in Trinity County, Boone Brothers have rigged up No. 1 A. Williamson, 2,500 feet south of the north line and east of the west line of a 60-acre tract in the B.B.B. &C. Survey, 10 miles north of Trinity. Across the line in Walker County, 3 miles northwest of New Waverly, Bradley and others are building roadway for No. 1 Trinity Lumber Co. on the J. C. Harrison Survey in Abstract 263.

Calhoun County

On the Seadrift prospect, Calhoun County, Continental Oil Co. has abandoned No. 2 American National Realty Co. and is skidding the derrick over for No. 3, 150 feet northeast of No. 2 in Block "C" of the Pedro Garcia Survey.

Brazoria County

On the Nash dome, Brazoria County, British-American Oil Co.'s No. 1 Nash in the Thomas Alsberry League, cored sands with oil shows from 4,102-42 feet and is coring to 4,147 feet, at which time screen and liner will be run preparatory to testing.

Wharton County

The second abandonment for the Pickett Ridge field, Wharton County, was Texas Co.'s No. 4-A Pierce abandoned in shale at 4,772 feet, 2,648 feet southeast of the northwest line and 5,720 feet northeast of the southwest line of the I.&G.N. Survey. The company has the derrick up for No. 6-A Pierce, 660 feet north, 58 degrees east and 751 feet south, 32 degrees east of No. 2-A Pierce in the I.&G.N. Survey.

Gasoline Imports

CHATHAM, Ontario, Nov. 16.—Imports of natural casinghead, compression or absorption gasoline lighter than .6690 specific gravity into Canada in September totaled 4,236,835 gallons valued at $262,636 compared with 636,989 gallons valued at $34,577 in August. While all the August imports came from the United States, 2,464,851 gallons valued at $172,646 in September came from Peru and the remainder from the United States.

Imports of gasoline lighter than .8235 specific gravity in September totaled 2,377,135 gallons valued at $192,891 against 2,720,805 gallons worth $216,738 in August. Imports from Rumania in September were 520,000 gallons valued at $33,230 compared with 780,000 gallons valued at $47,284 in August. The remaining imports in both months came from the United States.

Exports of gasoline and naphtha in September totaled 399,992 gallons worth $60,281 compared with 33,226 gallons worth $3,611 in August.

Petroleum Production

OTTAWA, Canada, Nov. 16.—Production of crude petroleum from all Canadian fields in September reached a total of 123,918 bbls. compared with 117,652 bbls. in August and 115,011 bbls. in September, 1934. For the nine months of 1935 production amounted to 1,074,723 bbls. compared with 1,070,517 bbls. in the same period last year. New Brunswick production in September increased to 1,087 bbls. compared with 443 bbls. in August; Ontario production was 13,688 bbls. compared with 14,468 bbls. in August; and Alberta production was 109,143 bbls. against 102,741 bbls. in August. All three provinces were higher than in September, 1934. For the nine months of 1935, New Brunswick production was 8,249 bbls. compared with 8,458 bbls. in the 1934 period; Ontario was 124,695 bbls. against 103,354 bbls. last year; and Alberta was 941,779 bbls. compared with 954,267 bbls. in the 1934 period.

GULF COAST WATER SHIPMENTS, SEPTEMBER, 1935

Company and terminal—	Crude—Coastwise	Crude—Exports	Refined—Coastwise	Refined—Exports	Total
Atlantic Pipe Line Co.:					
Atreco	1,767,569.42	.....	.....	.....	1,767,569.42
Texas City	261,570.24	.....	7,729.12	.....	269,299.36
Harbor Island	549,435.04	30,460.99	.....	.....	579,896.03
Gulf Refining Co.:					
Port Arthur	363,391.96	.....	2,214,168.44	341,357.05	2,918,917.45
Humble Oil & Ref. Co.:					
Baytown	824,917.33	166,367.32	2,109,130.52	1,040,279.47	4,150,694.64
Harbor Island	1,452,748.58	31,496.12	.....	.....	1,485,244.70
Texas City	802,640.91	.....	.....	.....	802,640.91
Ingleside	33,232.71	.....	.....	.....	33,232.71
Magnolia Petroleum Co.:					
Beaumont	680,029.37	.....	2,099,560.52	.....	2,779,589.89
Pure Oil Co.:					
Smiths Bluff	458,795.00	.....	776,777.00	.....	1,235,572.00
Shell Petroleum Corp.:					
Houston	148,744.00	.....	1,014,882.00	13,162.00	1,176,788.00
Norco	.....	.....	283,505.00	90,724.00	374,229.00
Standard Oil Co. of La.:					
Baton Rouge	85,574.00	.....	960,984.00	304,900.00	1,351,458.00
Sun Pipe Line Co.:					
Sabine Pass and Sun..	1,379,946.23	.....	.....	.....	1,379,946.23
The Texas Co.:					
Port Arthur	1,359,171.00	768,497.00	2,221,186.00	508,800.00	4,857,654.00
Miscellaneous:					
Houston	1,288,812.77	215,306.18	1,100,661.88	262,271.13	3,067,052.96
Total Sept., 1935	11,407,619.56	1,312,127.61	12,788,584.48	2,661,493.65	28,169,825.30
Total Aug., 1935	12,642,394.02	1,569,463.21	17,201,710.81	2,608,787.59	29,022,355.62
Difference	1,234,774.46	257,335.60	586,873.67	52,706.06	852,530.32

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SABINE DISTRICT ALIVE WITH INDUSTRY; EXTEND RODESSA

By
J. R. CRUMPTON

SHREVEPORT, La., Nov. 18.—The outpost tests in the Rodessa Field for possible extension of production in three directions shared interest in the North Louisiana district during the past week with a number of tests in other potential Glen Rose producing areas. Notable among the latter is the Sligo field in Bossier Parish and the Sugar Creek-Lisbon area in Claiborne Parish. In fact the whole northwestern part of this district on what is known as the Sabine Uplift is a beehive of activity. This is also true of Cass and Marion Counties in the southwestern Rodessa trend and the southwestern counties in Arkansas to the north and northeast of the Rodessa field. There are at least two dozen geophysical crews working in these areas, representing every major operator in the Mid-Continent. This seismographic work is concentrated at the present in the parishes of Bossier, Webster, DeSoto, Bienville and Claiborne in the North Louisiana district and in Cass, Marion, Panola and Shelby Counties, East Texas.

Big Well Afire

A deep test in the Sligo field, Triangle Drilling Co.'s No. 3 Skannall Unit, well No. 1, section 13-17-12, blew out unexpectedly from the 2,800-foot level. The well immediately was fired by rock friction and the machinery and 112-foot steel derrick is a complete loss. The gas flow is estimated at 50,000,000 feet and at this writing the fire has not been extinguished. The Sligo field produces gas from several horizons from the Nacatoch around the 900-foot level to the Oolitic lime in the Glen Rose at 4,300 feet. The present test was started to test oil bearing sands in the Trinity below the Glen Rose gas producing lime.

Rodessa Extended

The Rodessa field was extended one-half mile north on the downdip with the completion of G. H. Vaughn Production Co.'s No. 1 Hunter-Derryberry, 990 feet south and 1,804 feet east of the NW cor. section 14-23-16. The well flowed 140 bbls. per hour through 1½-inch choke on tubing from a total depth of 6,026 feet. Top of saturation was logged at 6,012 feet and production is coming from the Dees sand or the third producing gas horizon in the gas area near the fault line. One-half mile northeast of this extension, the same operator's No. 1 T. M. Comegys, section 10-23-16, has not made a well after deepening from original testing depth of 5,996 feet to 6,000 feet. The hole is being swabbed after blowing with air and gas for a week. Both wells topped the saturation at the same subsea depth and are bottomed at the same depth subsea, 5,780 feet. One-fourth of a mile farther north, George Manahan's No. 1 Comegys, section 10-23-16, should reveal more information on the possibilities of the Hill, Gloyd and Dees horizons as oil producers. This test topped the Hill sand, first gas horizon to the south, at 5,748 feet and checks 5 feet lower subsea on this contact than Vaughn's No. 1 Comegys. Last reports from the well is that it cored lime, shale and shells with no oil saturation from 5,910-30 feet.

Near Results in East Texas

R. W. Norton's two flank wells, one northeast and the other southwest near the Cass County, East Texas, line should be completed within the next week. The latter, No. 1 Fosque, section 20-23-16, topped Hill sand at 5,712 feet, Gloyd sand at 5,820 feet and the saturation at 5,972 feet. No. 1 Tyson heirs, section 13-23-16, a mile northeast of production, contacted Hill sand at 5,712 feet and saturated lime at 5,990 feet and is coring at 6,000 feet. Casing is being set above the saturated lime and both wells have all the earmarks of being good producers. The Rodessa field now has 15 oil wells with an allowable of 700 bbls. per well during the month of November. There are more than 20 rigs running in the area with the immediate prospect of this number increasing rapidly as production is extended.

Lion Oil Refining Co. is moving in rig on its No. 1 J. M. Wynn in section 9-23-15, the farthest northeast trend test. It is located more than 4 miles from nearest production. The Delta Drilling Co. has contract to drill this well. Bartex Pipe Line Co. has set surface casing on its No. 1 Norton estate, section 18-23-15, about midway between the Lion Refining test and the producing wells just north of the Rodessa townsite. M. H. Marr and others are rigging up on No. 1 W. J. Hunter in the NW cor. SW section 13-23-16, an offset to the east of Pelican Oil & Gasoline Co.'s first completion, which made some distillate and about 20,000,000 feet of gas.

Leases Are Active

As stated above geophysical crews are busy in Northwest Louisiana and independent operators are busy assembling blocks over a widely scattered area. DeSoto Oil & Gas Co. has derrick up on No. 1 Mower, section 9-16-10, Bienville Parish. The test is located in the Lake Bisteneau gas area southeast of the Sligo field and near the intersection of Bossier, Webster and Bienville Parishes. It is reported to be a deep test. Another block is reported to have been assembled in Bienville on a likely looking structure east of the town of Ashland near Black Lake. A total of seven new blocks have been assembled in half a dozen parishes including Lyons & Myers' No. 1 Brantley, section 1-21-9, Webster Parish, about midway between the Gleason gas area and the Homer field. This test is located on a block of approximately 5,000 acres. The best feature in connection with this new wildcatting is that most of the contracts call for from 5,000 to 6,000-foot holes. The Zeni Oil Co. of Houston has assembled approximately 41,000 acres in a solid block in Concordia Parish and has made a tentative location in section 28-6n-8e. The acreage is located on the Conroe trend and the test will be drilled to 5,000 feet if necessary. Creighton & Sneed of Shreveport has the contract to drill the well, and is moving material on location.

Interesting Wildcats

Some of the wildcats now drilling have about reached the testing stage, including two in the Sugar Creek area of Claiborne Parish. E. T. Oakes' No. 1 Patton estate, section 1-20-5, is temporarily shut down in anhydrites at 4,135 feet and Ryan Oil Corp.'s No. 1 Gladney, section 27-20-7, is drilling in shale and lime at 4,114 feet. No information was obtained on this test on the anhydrite contact. Amerada Petroleum Corp.'s No. 1 Weil, section 53-1s-2e, Rapides Parish, plugged back to 5,688 feet from a total depth of 6,837 feet, drilled out cement to 5,780 feet and perforated casing from 5,705-10 feet. A drill stem test will be made at this depth where a good show of oil and gas was tested a few weeks ago.

The North Louisiana district reported five other completions in addition to the one in Rodessa. Jal Drilling Co.'s No. 1-A Scales, section 35-13-12, in the old Naborton field, DeSoto Parish, is pumping 96 bbls. daily from 2,415 feet. Three small gassers were completed in the Monroe field, two in the Ouachita Parish area and one in Morehouse Parish. The Hunter Co.'s No. 1 fee, section 17-19-14, Caddo Parish, was dry and abandoned at 2,435 feet.

ARKANSAS

Haynes Oil Corp.'s No. 1 Embree estate, section 9-20-28, Miller County, is the first test to spud in as a possible extension of the Rodessa trend into Arkansas. It is reported that Governor O. K. Allen of Louisiana and others will begin a test at an early date about 5 miles north of Rodessa production. In Monroe County, J. R. Lockhart and others' No. 1 Rue Abramson, section 19-1s-1w, spudded in on October 5 and set 10-inch surface casing at 400 feet. The test has made good progress, contacting top of Wilcox at 2,238 feet and the Midway at 2,720 feet. The test is coring black shale at 3,338 feet.

A number of deep wildcats in widely scattered areas are making good progress. Joe Modisett's No. 1 Red River Lumber Co., section 21-19-24, Lafayette County, topped first anhydrites at 4,924 feet and massive anhydrites at 5,100 feet and is drilling in that formation at 5,270 feet. Benedum & Trees' two deep tests, one in Ashley County and the other in Ouachita County, had barren results on drill stem tests in the upper horizons. In the former, No. 1 Holmes, section 4-17-5, is drilling in red shale at 4,170 feet and in Ouachita, No. 1 H. Brighton, section 29-14-19, is coring red beds at 4,050 feet. Two miles southwest of T. J. Gaughan's No. 1 Bragg, lone wildcat producer 5 miles west of Camden, Ouachita County, W. B. Street, trustee's No. 1 Rath & Cartier, section 35-13-18, is drilling at 516 feet after setting 12-inch surface casing at 42 feet.

The area west of Magnolia in Columbia County is getting a good geophysical play and at least two deep tests are in the making. Several major companies have recently purchased acreage but no drilling contract has been announced to date.

East Texas Border Counties

American Liberty Oil Co.'s No. 1 J. B. Rodgers, C. M. Robinson Survey, Cass County, a wildcat about 6 miles southwest of the Rodessa field, has set 9⅝-inch casing at 2,000 feet. United Gas Public Service Co.'s No. 1 Thurman, John Coleman Survey, just inside the Cass County line from Rodessa, topped anhydrites at 4,996 feet and is drilling in shale and anhydrites at 5,440 feet. The location of this test indicates that it is in the Rodessa gas area. One new location was staked in the Cass County area a short distance from the Louisiana line. R. W. Norton is rigging up on No. 1 Haywood in the southeast corner of the Priscilla Evans Survey.

Estimated Production

Estimated daily gross production, all companies, week ending November 16:

NORTH LOUISIANA

	Bbls.
Bellevue	520
Caddo, light	4,505
Caddo, heavy	2,335
Converse	1,185
Cotton Valley	345
DeSoto and Red River	1,370
Elm Grove	395
Haynesville	3,420
Holly	150
Homer	2,640
Pleasant Hill	175
Rodessa	9,555
Sarepta-Carterville	470
Urania	2,710
Zwolle	1,265
Total	31,040

SOUTH ARKANSAS

	Bbls.
Champagnolle	1,945
El Dorado	2,220
Lisbon	315
Miller County	1,375
Nevada	865
Smackover, light	2,190
Smackover, heavy	17,850
Stephens	625
Urbana	2,210
Total	29,595

Michigan Field Report

TWO BIG WELLS IN CRYSTAL FIELD IN CENTRAL MICHIGAN

By
PAUL A. ELLIOTT

MUSKEGON, Mich., Nov. 18.—On the heels of the greatest decline in average daily oil production experienced in Michigan this year, a drop of about 5,000 bbls. recorded during the week ended November 9, came two sensational strikes in the Ferris and Crystal Townships sections of the Crystal field last week.

The more spectacular of the two wells which brought revived interest in the Montcalm County pool now leading the state in average daily production was James H. Hibbard's No. 1 Bessie Nickerson Sartor, SW SE NE section 22-11n-5w, a Ferris Township extension test, which flowed over the top of a standard derrick when it struck unexpected major production in the upper Traverse pay sands.

Located a mile northwest of the United-Connors outpost in section 26, the Sartor well struck a flow estimated upwards to 5,000 bbls. daily at 2,878 feet, or 113 feet in the Traverse limestone. Although it was being drilled as a 6-inch hole expected to be cased above the Dundee for a test of the more profitable lower pay sands in this section, the Sartor flowed by heads until killed by Traverse water reported to be coming from a higher level than the pay sands.

Drilling operations were suspended for three days until the operators could run a string of 5-inch casing with a packer to test the possibilities of commercial production at this level. The hole was full of fluid but the well had not been finished.

There was no control head in place and no field tanks on the lease when the Traverse flow was encountered as the operators expected nothing at this depth.

The Sartor test first attracted interest several weeks ago when it struck an open flow of more than 3,000,000 feet of natural gas daily in the Michigan Stray sand at 1,100 feet, or 38 feet in the shallow gas stratum. The Traverse was topped at 2,765 feet.

Crystal Gusher

Although not of as great significance from a semiwildcat standpoint, the Gordon Oil Co.'s No. 3 William E. Strait, SE NE NW section 3-10n-5w, Crystal Township, caused no little flurry last week when it blew in with an estimated initial production of about 8,000 bbls. a day from the Dundee pay sands.

Located in the proved Crystal Township section of the big central Michigan pool, the Strait well topped the Dundee at 3,187 feet and struck the big pay at 3,195 feet. The same company's No. 4 Strait on the same lease was reported still producing about 275 bbls. daily from the Traverse lime at about 2,800 feet.

Four other smaller Dundee producers which added more than 1,000 bbls. more of new daily potential included two completions in Crystal and two in Ferris Township.

Stork Oil Co.'s No. 4 George Dickenson, NE NW SE Section 3, Crystal Township, was the largest of the quartet producing at the rate of 40 bbls. an hour and estimated good for at least 800 bbls. a day after acid treatment in the Dundee. It was cased at 3,169 feet and completed at 3,186 feet with 1,500 feet of oil in the hole the week before.

Snowden & McSweeney's No. 4 Wight heirs, NW NE NE section 10, also Crystal Township, likewise first drilled into the Dundee the week before was said to be good for 50 bbls. a day on the pump. It was cased at 3,172 feet and completed at 3,205 feet.

W. J. Bernier's No. 2 William Strait, SE NW SW section 35, Ferris Township, was completed at 3,197 feet for a daily flow of about 250 bbls. against 400 pounds back pressure. Dundee limestone was topped at 3,194 feet.

Another test previously drilled into the Dundee pay sands was placed in production at 150 bbls. a day by completion of Arthur Morris' No. 1 Pugsley, NW NE SW section 26, Ferris Township, for an output of 150 bbls. a day in the Dundee at 3,246 feet.

Rowmor Corp.'s No. 2 Frank Clark, SW NW NW section 2, Crystal Township, also filled up with oil stuck at 3,200 feet after topping the Dundee at 3,179 feet and striking gas at 3,196 feet. It was to be completed this week.

Drilled too deeply, Shell Petroleum Corp.'s No. 2-B L. J. Smeed, SW SW NW section 2, Crystal Township, struck salt water at 3,193 feet and was being plugged back to 3,191 feet where it flowed 60 bbls. when the pay sand was first penetrated. It had been cased at 3,172 feet.

One Ferris Township test drilled into a flow of about 2,500,000 feet of natural gas daily in the Michigan Stray sands at 1,005 feet, or 5 feet below the top. It was the Gordon Oil Co.'s No. 1 E. T. Williams, SW NW SE section 36, which was tubed and completed as a gasser.

Nearing Completion

Ten Crystal area tests were nearing completion last week, six of them in Crystal Township and four in Ferris.

Pure Oil Co.'s No. 4 H. S. and C. D. Preston, NW SE NE section 3, Crystal Township, flowed by heads when it was drilled into the upper Traverse pay sands but the operators decided to continue to the Dundee where early completion is anticipated.

Five other Crystal Township tests were nearing the top of the Dundee limestone as follows: McClanahan Oil Co.'s No. 1 Frost heirs, NE SE SW section 3; Crystal Syndicate, Inc.'s No. 1 Hattie Drake, SW NW NE section 3; Linabury & Barker's No. 1 Frost, SE SE SE section 8; Rowmor Corp.'s No. 3 Frank Clark, NE NW NW section 2, and Strange & Fortney's No. 1 Elva M. Rockelman, NW SW SE Section 11, all drilling at about 3,000 feet or more.

Completion of the Swanson Oil Co.'s No. 1 Laforest E. Davenport, NE NE NE section 28, Ferris Township, was delayed by casing trouble after a show of oil and gas had been encountered at 3,158 feet and casing cemented at 3,165 feet. It may be completed this week.

Another well being completed after tubing to pump as the Morris-Barnes Oil & Gas Syndicate's No. 3 Pugsley, SE NE SW section 26, Ferris Township, which topped the Dundee low at 3,261 feet and the pay sands 1 foot in. Same company's No. 2 Pugsley, SW NE SW section 26, continued shut down at 3,250 feet.

One other Ferris test drilling below 2,000 feet was the Isabella Oil Co., Inc.'s No. 2-B William E. Strait, SW SW SE Section 34, soon to be completed.

Montcalm Wildcats

After unsuccessfully testing a show of several barrels daily of oil struck in the upper Traverse pay sands, the Rex Oil & Gas Co.'s No. 1 Sanford Newland, NW NW NW section 2-12n-8w, a Cato Township, Montcalm County wildcat was dry, plugged and abandoned, striking bottom water in the Dundee at 3,537 feet. Dundee was topped at 3,482 feet and the show of Traverse oil at 3,040 feet.

Jetter Oil Co.'s No. 1 C. N. Long, SW NW SE section 1-9n-6w, a Bushnell Township wildcat, also was delayed in drilling into the Dundee by collapsed casing. A show of gas was struck at 3,099 feet.

Water Encroachment

Water encroachment, a problem previously faced by operators in older central Michigan fields, such as Porter Township, Midland County, and Vernon Township, Isabella County, now is becoming sufficiently acute in the Crystal pool to necessitate some special provision for brine disposal.

In the other fields brine has been piped to the lines of the Dow Chemical Co. and then transported to its Midland plant, but in Crystal it is possible it will be disposed by dumping into Duck Lake, a small body of water which adjoins the proved field in sections 10 and 11, Crystal Township.

A special meeting to discuss the subject was held in Saginaw under the auspices of the Michigan oil producers committee, self-regulating body formed by the producers. It was decided to cooperate with the state department of conservation in satisfactorily solving the problem.

Indicative of this development, it was reported two tests, one in section 34, Ferris Township, and the other in section 3, Crystal Township, probably will be plugged and abandoned. They are the Isabella Oil Co.'s No. 1 William Strait in the NW quarter section 4, Ferris, and the Daily Crude Oil Co.'s No. 3 W. Robbins, in the NE quarter section 3, Crystal.

Two Deepening

Progress of two deepening jobs, one a test of the Monroe in Section 10, Crystal Township, and the other a large gasser in the Michigan Stray sands in Ferris was reported.

McClanahan Oil Co.'s No. 1 J. Barger, section 10, Crystal Township, near J. W. Leonard, Jr. and others' discovery well on the Otto Durbin lease, has cemented casing in the top of the Monroe lime and soon will be drilled in as the deepest test in the proved Crystal area.

T. F. Caldwell, Inc.'s No. 1 W. H. Pugsley, in the NW quarter section 36, Ferris Township, will be carried to the Dundee for oil passing up a flow of about 12,000,000 feet of gas daily struck in the Michigan Stray sand several months ago.

Gratiot County

One "duster" was completed last week in North Shade Township, Gratiot County, while completion of a new gas test in New Haven Township, same county, near the Crystal field, was delayed by casing trouble.

The dry hole was the Jackson-Meyer-Schmidt, trustee's No. 1 Newton Garner, NE NE SE section 10-9n-4w, North Shade, abandoned at 3,180 feet where it was 12 feet in the Dundee topped at 3,168 feet.

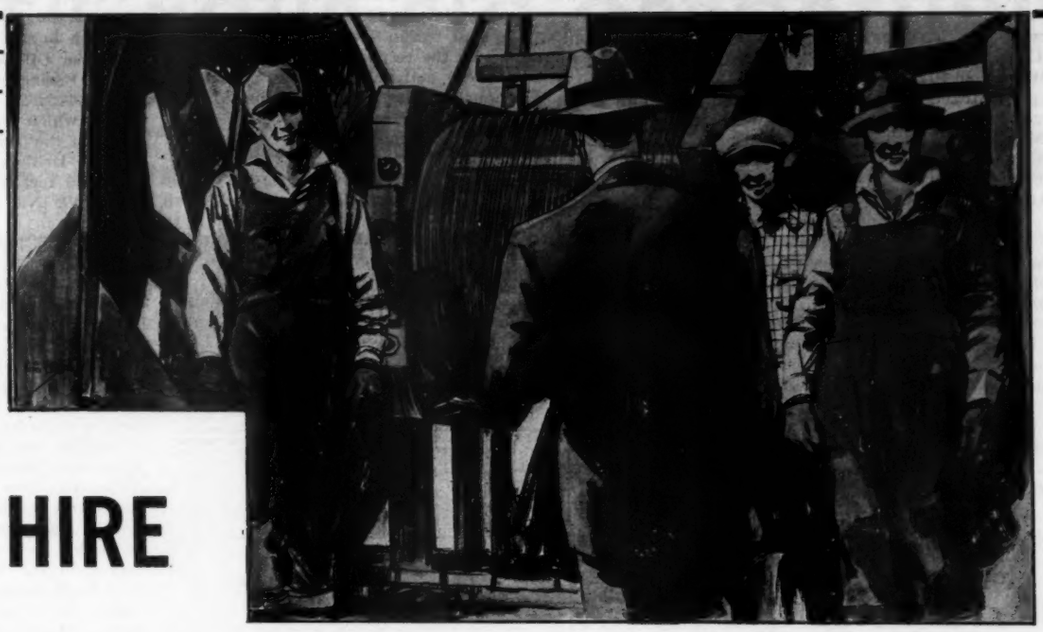
The Crystal Oil & Gas Co. was experimenting difficulty in cementing casing in its No. 1-B R. B. Shaver gas test, C NW NE section 4, New Haven Township, at 941 feet where a flow of about 1,000,000 feet of gas daily already had been encountered before casing. The Michigan Stray sand was topped at 939 feet.

Charles H. Bell's Wheeler Township wildcat on the Roy Velie lease, NE NE SE section 13-12n-1w, also in Gratiot County, was casing at 3,054 feet to shut off a heavy flow of lower Traverse water before drilling into the Dundee.

Gassers

About 57,000,000 feet of natural gas open flow was added to the potential of the big Mecosta-Montcalm County gas field in central Michigan, now the largest in the state with an aggregate open flow capacity of more than 350,000,000 feet a day.

Five new wells ranging from 4,800,000 to 16,150,000 feet a day were brought in when drilled into the shallow Michigan Stray sands while a sixth struck a flow of 500,000 feet



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and was deepening for possible larger production.

Largest of the five completions was the Gordon Oil Co.'s No. 1 C. B. Loughlin, C SW SE section 4-12n-7w, Belvidere Township, Montcalm County, where the largest gas flow ever encountered in Michigan was recorded only a week before in section 3. The Gordon-Loughlin flowed at the rate of 16,150,000 feet a day at 1,298 feet.

The Michigan Exploration Co., Inc.'s No. 1 William J. Richardson, SW SW NE section 3, which gauged 37,500,000 feet daily the week before, was successfully shut off and drilling on to test the Dundee for oil.

It had an estimated flow of between 40,000,000 and 50,000,000 feet a day before finally being shut off at 35 feet in the pay where it indicated central Michigan gas reserves probably will triple former estimates based on a pay sand thickness of 6 or 7 feet.

Millbrook-Hinton

Three new Millbrook Township gassers in the Mecosta County half of the field had an open flow capacity averaging nearly 12,000,000 feet a day for an aggregate of 35,800,000 feet.

Wiser Oil Co. completed two of the new gassers, the No. 1 Garner and Wilson, C SW NW section 34-13n-7w, making 13,100,000 feet at 1,260 feet, or 18 feet in the Stray and the No. 1 Peter Hough, C NE NW section 31, same township, gauging 10,200,000 feet daily at 1,320 feet after topping the sand at 1,302 feet.

Gordon Oil Co.'s No. 1 Mary Dibean, C NW SW section 30, Millbrook Township, struck a flow of 12,500,000 feet a day at 1,305 feet after drilling 15 feet into the Stray.

Gordon and Edward Stewart's No. 3 Garner Brothers, C SE SW section 32, also in Millbrook, was shut down at 1,309 feet after drilling through 5 feet of pay from 1,302-07 feet for a flow of about 500,000 feet. The hole will be deepened in the hope of picking up more pay sand and increased open flow after a 2-foot break to 1,-309 feet.

The Hinton Township sector of the same field also contributed a new producer making 4,800,000 feet a day when the Columbia Oil & Gas Co.'s No. 1 R. L. Stebbins, C NE SE section 25-13n-8w, was drilled in. The Michigan sands were topped at 1,292 feet and the pay at 1,306 feet before completion at 1,314 feet.

Near Completions

Four other tests in Hinton and Millbrook Townships also were nearing completion in the gas sands as drilling activity and new locations continued to mount rapidly increasing the available supply of natural gas in central Michigan for which several large new markets are now being considered.

Goll, Graves & Mechling, Inc.'s No. 1 V. V. Sheets, NW SW NE section 35, Millbrook, was reported to have struck the pay but no report on the initial flow was available. Frank McCollister's No. 1-A Byron Yeomans, C SW SW section 35, same township, also was completing in the Michigan Stray.

Two Hinton Township tests also nearing completion were Charles Bell's No. 2 Orin Dell Satterlee, C NW NE section 25, and Columbia Oil & Gas Co.'s No. 1 Perry J. Calkins and others, C SW NE section 23.

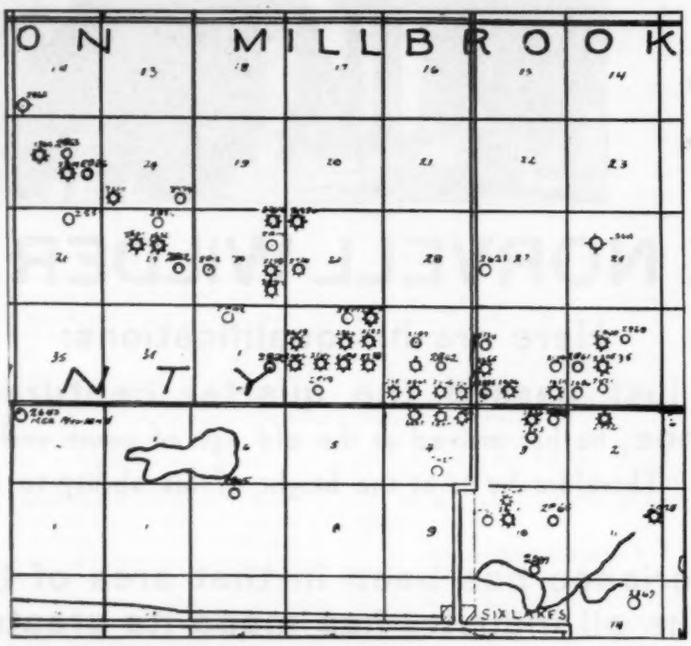
Midland Petroleum & Gas Co.'s No. 1 Henry and Mary L. Houghton, C NW SE section 33, Millbrook, was cemented at 1,220 feet.

Ten other tests were active in Millbrook and Hinton and seven in Belvidere Township, Montcalm.

One near failure and an abandoned location were recorded in two Mecosta County gas wildcats, one in Aetna Township and the other in Deerfield Township.

Operators drilled through a very light show of gas at 1,265 feet in Clarence E. Larson and George Henry Flynn's No. 1 Amol Swanson, C NW SE section 11-13n-10w, Aetna Township, going by a string of lost tools at 1,250 to 1,325 feet where the job was shut down.

The Strosnider Oil & Gas Syndicate abandoned its No. 1 William Hand location, C SW SE section 4-13n-9w, Deerfield Township.



Part of the Mecosta County and Montcalm County gas area in which the record gas well in Michigan was found

Midland County

Although only one new oil completion was recorded in Porter Township, Midland County, another in Jasper Township of the same county was nearly tripled by acid treatment and several were nearing completion in the Dundee pay sands.

Pure Oil Co.'s No. 3 State-Porter, SE NE SE Section 15-13n-1w, Porter, made 59 bbls. in 12 hours and was to be acidized at a total depth of 3,-426 feet. Dundee was topped at 3,-378 feet.

Pure's No. 1 Laura E. Root, previously drilled in for an initial of 125 bbls. a day, was boosted to 350 bbls. by acid treatment. It is located C SE SE section 2-13n-2w, Jasper Township.

Nearing Completion

Pure's No. 1 C. Hoyt, NE SE NE section 19, Porter Township, was drilling into the Dundee as the week closed. Same company's No. 18 Mina C. Narmore, NE NE SE section 16, also Porter Township, also was near completion, while in Greendale Township, Pure's No. 5 Novak, SW NE SE section 7-14n-2w, also was about to drill in from a depth of 3,500 feet.

Twenty-three other Midland County tests, including one in Geneva Township near a recent successful outpost, one in proved territory in Lee Township, two in Greendale, four in Jasper and the rest in Porter Township also were active in all stages from just making location to drilling in the Traverse.

Ogemaw County

A lone completion also was made in Ogemaw County fields, although acid treatment was reported to have increased the flow of another to 1,000 bbls. and simultaneously decreasing the output from two offsets. Several other tests also were nearing completion in the Traverse and Dundee limestones.

Initial production of the Redman Oil Co.'s No. 2 Wobig heirs, NE NW SE section 6-21n-3e, Mills Township, was estimated at 100 bbls. a day from the Dundee topped at 2,457 feet and drilled to 2,614 feet.

The Melling Oil & Gas Co.'s No. 2 L. Roma, brought in the week before for 10 bbls. an hour natural in the lower Traverse at 1,810 feet, was reported increased to 1,000 bbls. daily.

It was said to have virtually killed the flow of two offsets, however, including the Fortney Oil Co.'s No. 1 State, sensational lower Traverse producer which came in for 10,000 bbls. a day several weeks ago and has produced more than 75,000 bbls. of crude. The other unfortunate offset is the Sun Oil Co.'s No. 1 State, NE SE NE section 1-21n-2e, Horton Township, which made two small flows from the lower Traverse at 1,811 feet two weeks ago and had been testing with a probability of deepening to the Dundee.

Melling Oil & Gas Co.'s No. 5 State, NW SW NW section 6, Mills Township, previously completed as a small producer in the Dundee at 2,600 feet, was placed on the pump.

Tubing was being pulled from Charlotte G. Marsh, trustee's No. 1 State, NW NE SW, same section, to drill to the Dundee after unsuccessfully testing the Traverse.

Casing was cemented in Fred Clark and Cleston Johnson's No. 2 Himmelhoch and others, NW NE SW, also in section 6 of Mills, at 2,447 feet, the top of the Dundee. It will soon be drilling in.

Weber Oil Co. was still testing its No. 2 Boeing estate, SE SW SE section 36-22n-2e, West Branch Township, which struck an unexpected flow in the Traverse two weeks ago. United Drillers, Inc. was shut down at 2,650 feet in their No. 1 Thomas Rau, NE NE SW section 19, West Branch.

A second test of the Fortney Oil Co. in section 1, Horton Township, the No. 2-B State, NW NE NE section 1-21n-2e, also was drilling in the Traverse at more than 1,800 feet.

Fifteen other Ogemaw County tests were active in six townships, including the Muskegon Development Co.'s No. 1 Nettie B. Watson, NW SE NW section 5-23n-3e, Cummings Township, a wildcat, one in proved territory in Churchill Township, one in Ogemaw Township, two in Horton, four in Mills and six in West Branch.

Saginaw County

Another 10-bbl. Berea well was completed in the Birch Run Township pool in Saginaw County. It was the Smith Petroleum Co.'s No. 1 Morse-Getty, NE SW NE section 20-10n-6e, which topped the shallow oil formation at 1,532 feet and was finished at 1,554 feet.

The Smith company, which has developed a string of small Berea producers ranging from 10 to 25 bbls. daily, has started another test in the same section on the Charles W. Bois lease. One other Saginaw County test, a wildcat in section 23, Tittabawassee Township, has not yet reported completion.

Western Michigan

Another disappointment in the search for oil or gas in Allegan County was recorded last week when Lentz and Miller, of Muskegon, drilled the Gerrit Vander-Leest's No. 1 Harm Berens, SW SE NE section 26-4n-14w, into salt water in the upper Traverse formation in Overisel Township.

The Reed Oil Co. planned to run casing in the top of the Dundee Monday or Tuesday in the National Minerals Corp.'s No. 1 Jasper Lewis test, located SE SE SW section 5-10n-11w, Solon Township, Kent County, near Cedar Springs. The limestone was topped at 2,845 feet and drilling suspended at 2,853 feet to case before drilling in the latter part of next week.

The Reed Oil Co. also struck a show of oil and water in the Berea in its latest test on the Muskegon River flats, the No. 3 J. J. McDermott, SW SW section 10-10n-16w, Muskegon Township, but was drilling on to test the Antrim shale just above the Traverse.

The Reed company also was driving pipe at about 50 feet Saturday in James H. Barton's No. 1 Albert H. Smith, SE NE NE section 29-10n-10w, Nelson Township, one of two new Kent County tests. The Muskegon Development Co. also has started a new hole for the Rex Oil & Gas Co.'s No. 1 Andrew Johnson, SW SE NW section 36-10n-12w, the other new Kent County test in Tyrone Township.

Accountants Meeting

The Petroleum Accountants Society of Tulsa will hold its November meeting on Friday, November 22, at 6 p.m. in the Mayo Hotel. H. D. Mahin of Phillips Petroleum Co. will speak on the "Federal Social Security Act."

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Oklahoma Operations

By JAMES McINTYRE

IMPORTANT WELLS DELAYED AS THEY NEAR COMPLETION

The Continental Oil Co.'s discovery well in the Jesse area, Pontotoc County, staged a brief show one day in the past week, flowing at the rate of 10,500 bbls. It was shut in for lack of pipe line and storage facilities. The Stanolind Pipe Line Co., which already had a line into the Sledge & Lynch Hunton lime well north of the Continental's Bromide and McLish well, extended the line to the Continental lease and it was reported on Monday that before midnight the well might be put on production. The Continental's well is No. 1 McCarty, C SE SE NW section 12-1-7, southeast of the Fitts Pool. It is at a total depth of 4,621 feet and only 1 foot in the pay. McLish lime was topped at 4,427 feet. The Texas Co. was moving in rig for No. 1 Simpson, SE NW SW Section 12-1-7, two locations south and then two locations west of the discovery well.

Oklahoma

Estimated daily average production of Oklahoma for week ending November 16 and for the preceding week is as follows:

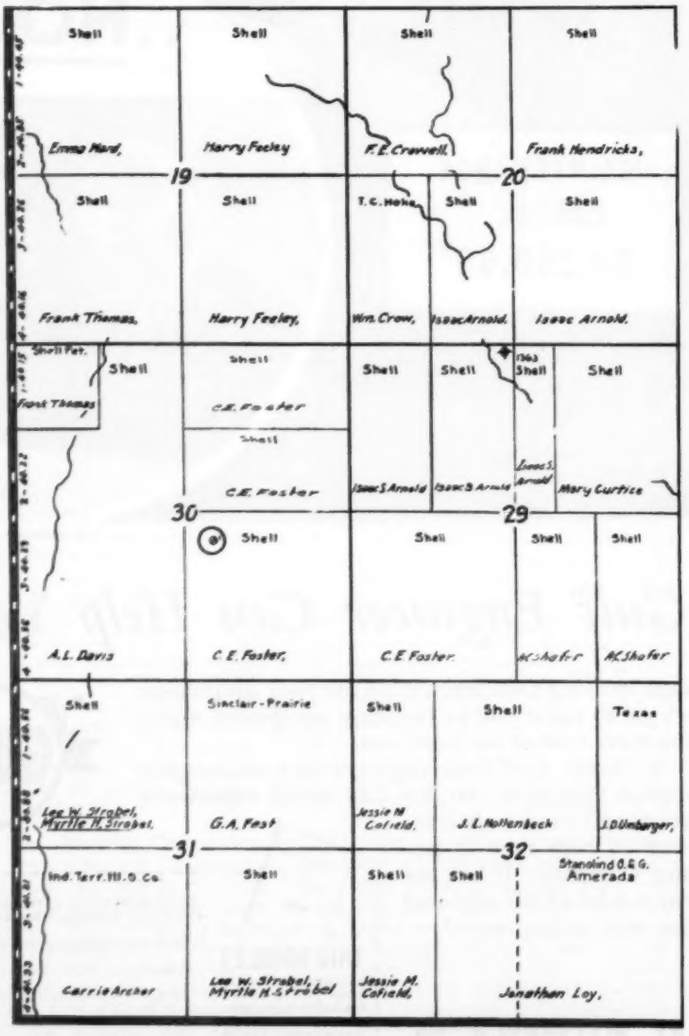
	Barrels	
	Nov. 16	Nov. 9
Allen	6,750	7,125
Asher-West Asher	1,025	975
Burbank	7,500	8,000
South Burbank	11,250	11,500
Balance Osage	23,500	24,000
Blackwell	4,850	4,750
Bristow-Slick	8,600	8,750
Chandler	4,200	4,200
Crescent	4,950	5,100
Cromwell	4,000	4,025
Cushing-Shamrock	12,000	12,250
Duncan district	4,150	4,250
Edmond	6,425	5,675
Fish	10,925	9,300
Fitts	35,125	25,025
Gray	1,775	1,450
Graham	4,100	4,175
Healdton	9,200	9,200
Hewitt	4,450	4,500
Heldenville	1,300	1,275
Keokuk	4,175	1,525
Konawa	1,750	1,675
Lucien	9,950	10,100
Marshall-Lovell	950	975
Oklahoma City	156,725	144,200
Papoose	1,100	1,125
Polo	4,050	3,450
Sasakwa and townsite	2,300	2,825
Sholem-Alechem	3,750	3,750
Seminole field:		
Bowlegs	3,200	3,900
Carr City	4,675	3,000
Earlsboro	8,075	8,550
South Earlsboro	975	1,050
East Earlsboro	10,725	10,300
Little River	14,550	14,375
East Little River	800	900
Maud	1,050	1,050
Mission	2,775	2,675
Seminole	12,675	12,150
East Seminole	1,175	1,075
Searight	4,475	3,325
Total Seminole	70,150	67,350
St. Louis-Pearson	22,575	21,700
Tatums	4,200	4,200
Tonkawa-Garber-Thomas	5,500	5,300
Wewoka	3,550	3,600
Yale-Jennings	4,100	4,200
Other pools	52,550	55,575
Total Oklahoma	514,250	490,575

The Carter Oil Co. and others' important wildcat in Coal County, No. 1 Thompson, C S half NE NW section 34-2-9, on a large and well defined structure, is also near completion. This well had Viola lime at 5,970 feet, cored at 6,155-60 feet, the recovered part of the core showing stains of oil. The hole was reamed to 6,160 feet and drilled to 6,176 feet, the stains persisting. Bromide is expected at about 6,210 feet. Tanks will be built and before Bromide is reached preparations will have been made to take care of whatever production the well may show.

Shell Petroleum Corp.'s No. 1 Foster, NW NW SE section 30-27-8w, in Grant County, is standardized at a total depth of 5,958 feet. The company expects to get results at a depth around 6,100 feet. Twelve miles south of this, Helmerich & Payne's No. 1 Crouse, C NE SW section 29-25-8w, which caused quite a furore a few weeks ago when it began flowing mud, and some oil and gas after the crew had shot the 8-inch casing at 4,443 feet, is still being worked on. The well had been drilled to 6,684 feet and the Wilcox sand topped at 6,615 feet had shown nothing. Then the 8-inch pipe was shot off at 4,443 feet and the well began performing. In the past week the 8-inch pipe was pulled and a Schlumberger tester was run but no oil showings were noted from 1,900 to 4,450 feet. This discourages the theory that the well was flowing from Tonkawa sand and it may have been Wilcox sand that was acting as though productive.

Sherry and others' wildcat in Okfuskee County, No. 1 Washington, C SW SW NE section 21-13-7, had Oswego lime at 2,780 feet and Prue sand at 2,795 feet. A core at 2,795-2,808 feet was made up of sand and shale, which showed oil. Another core at 2,850-57 feet, also sand and shale, showed a trace of oil. The crew was reaming hole.

The Carter Oil Co.'s deep test in the Fox pool, Carter County, No. 1 Williams, which looks to be good potentially for 10,000 bbls. at a total depth of 8,088 feet, is still giving the owners a lot of trouble. Notwithstanding that 9 tons of cotton seed hulls and 2,700 pounds of aquagel mixture have been poured into the hole under pressure the crew has not succeeded in getting circulation. On Monday the well pumped 350 bbls. of oil through drill pipe. There is a long stretch of open hole and a mass of cavings have stuck the drill pipe. The efforts to recover the drill pipe and case the well to the bottom have caused all the grief since the well put on its first big flow of oil.



Shell Petroleum Corp.'s interesting wildcat in section 30-27-8w, Grant County, now standardized at 5,958 feet

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Fitts Pool Completions

Fitts pool completions in the past week were as follows:

Stanolind Oil & Gas Co.'s No. 3 Norris A, NE NE SE section 26-2-6, deepened from 4,346 feet, earned a potential rating of 4,094.7 bbls. per day and 2,142,000 feet of gas at a total depth of 4,429 feet. McLish was topped at 4,360 feet and sand was topped at 4,405 feet. It is producing from Bromide and McLish sands.

Amerada Petroleum Corp.'s No. 3 Smith, SW SE NW section 28-2-7, had Bromide at 3,905 feet, sands at 4,000 feet and 4,093 feet, McLish at 4,120 feet, sands at 4,185 and 4,216 feet, total depth 4,290 feet. Flowed 1,333 bbls. of oil in four hours and 45 minutes through casing, and 582 bbls. in four and one-quarter hours through tubing. It was treated with 3,000 gallons of acid and made a 24-hour potential of 3,581 bbls. of oil and 2,000,000 feet of gas, Bromide and McLish sands producing.

Bishop Oil Co.'s No. 1 Simpson, NW SW NW section 28-2-7, had Bromide at 3,995 feet, first sand not recorded, second sand at 4,170 feet, McLish at 4,210 feet, sands at 4,240-70 feet and 4,294-99 feet, total depth. Flowed 2,928 bbls. through tubing in 23 hours and was credited with a potential of 3,420 bbls. of oil and 1,800,000 feet of gas, production from Bromide and McLish.

Moore and others' No. 5-A Craddock, 1,065 feet from west and 405 feet from north lines of SW ¼ section 29-2-7, deepened from 4,171 feet, 6 feet in McLish, to 4,360 feet, made a potential of 1,698 bbls. of oil, from both Bromide and McLish sands.

Moore and others' No. 1 Harper, SW SW NE section 29-2-7, is a Hunton lime completion at 3,348-3,620 feet, total depth 3,625 feet. It was acidized and flowed 335 bbls. of oil in eight hours through casing.

Carter Oil Co.'s No. 1 Smith, NW NE NE section 31-2-7, deepened from 5,976 feet, 3 feet in McLish, to 4,220 feet, finding sand at 4,075-80 feet,

was given a potential rating of 3,410-46 bbls. from Bromide and McLish sands.

Moore and others' No. 1 Mobley, NW NW NE section 32-2-7, produces from Bromide and McLish sands and is rated at 4,375 bbls. potentially. It had Bromide at 4,063 feet, sands at 4,175 and 4,220 feet, McLish at 4,278 feet, total depth 4,375 feet.

New work in Fitts included Manahan Oil Co. and others' No. 4 Reynolds-Wagner, 810 feet from north and 510 feet from west lines of SW¼ section 17-2-7, set 10-inch casing at 43 feet; Amerada Petroleum Corp.'s No. 4 Smith, NW SE NW section 28-2-7, cellar and pits; Skelly Oil Co.'s No. 2 Park College, C S half NW NE section 28-2-7, location for gas test; Skelly Oil Co.'s No. 3 Park College, SE NE NW section 28-2-7, location; Magnolia Petroleum Co.'s No. 2 Smith, NE SE NW section 28-2-7, cellar and pits.

Stanolind Oil & Gas Co. plugged back No. 6 Norris, SW SW SE section 25-2-6, from 4,315 feet to 4,280 feet and it swabbed 80 bbls. in 24 hours.

Blackstock and others' No. 2 Lewis, SE cor. section 19-2-7, after an acid treatment in Bromide sands flowed 114 bbls. the first hour and 64 bbls. the second hour through casing, total depth 4,437 feet, but plugged back to 4,397 feet.

Magnolia Petroleum Co.'s No. 5 Simpson, NE SE NE section 29-2-7, flowed 257 bbls. of oil in 20 minutes through casing and 452 bbls. in one hour and 30 minutes through casing and then 113 bbls. in one hour through tubing. It was then treated with 3,000 gallons of acid, total depth 4,290 feet, in McLish.

Moore and others' No. 3 Craddock, NW SW SW section 29-2-7, deepened from 4,121 feet, top of the McLish to 4,406 feet, was shut in for potential. It flowed 314 bbls. of oil in one hour, with gas at the rate of 5,000,000 feet per day at 4,336 feet.

Moore and others' No. 12 Wirick, NE SW SE section 29-2-7 flowed 150 bbls. in one hour at 4,063 feet.

Moore and others' No. 4 Woodruff, NW NW SE section 29-2-7, flowed 106 bbls. in one hour at 4,371 feet. It had been deepened from 4,238 feet, 18 feet in McLish lime.

Carter Oil Co. deepened No. 12 Richards, NE SE SE section 30-2-7, from 4,083 feet to 4,332 feet. It flowed 1,568 bbls. of oil in three hours.

Carter Oil Co. deepened No. 2 J. Smith, NE NE NE section 31-2-7, from 4,002 feet, 27 feet in McLish, to 4,222 feet and the well flowed 1,257 bbls. of oil in three hours through casing.

Moore and others' No. 1 Patrick, NW NW NE section 31-2-7, deepened from 4,093 feet, 3 feet in McLish, to 4,225 feet, flowed 96 bbls. of oil in 30 minutes with gas at the rate of 14,500,000 feet per day.

Moore and others' No. 3 Patrick, SW NW NE section 31-2-7, deepened from 4,105 feet, 8 feet in McLish, to 4,358 feet, flowed 101 bbls. in one hour at 4,243 feet, with gas at the rate of 3,000,000 feet per day. It was shut in.

Greater Seminole Field

Springrose Drilling Co.'s No. 2 Brandenberg, SW NE NE section 3-7-4, in the St. Louis pool, Pottawatomie County, was completed in the Dolomite zone. It pumped 393 bbls. of oil and about 250 bbls. of water at 4,100-12 feet.

Blackwell Oil & Gas Co.'s No. 5 Baker, 330 feet south and 255 feet east of C section 11-7-6, Seminole County, is a 75-bbl. Booch sand completion, 3,092-3,120 feet.

Tom Phillips and others' No. 1 Harjo, NW NW SW section 34-8-7, Seminole County, had Booch sand at 3,185-3,218 feet. It was shot with 20 quarts and swabbed and flowed 95 bbls. in 24 hours. It had been drilled to 3,437 feet and plugged back.

In the Olympic pool in Hughes County Potco Oil Co.'s No. 4 Dixon, NE NE NW section 12-9-8, was completed in Senora sand at 1,696-1,760 feet and made an initial production of 212 bbls. in 24 hours.

J. D. Campbell and others' No. 1 Knappenberger, SE NW NE section 17-9-7, deepened from 3,385 feet to Cromwell sand at 3,412-14 feet, total depth, flowed 275 bbls. in 12 hours with gas at the rate of 3,146,000 feet per day and was recompleted.

New work includes W. B. Pine's No. 3-A Burgess, SW cor. SE SE SW section 17-12-13, Okmulgee County, drilling at 1,100 feet; Rogers Brothers' No. 1 Oliphant, SE SW SE section 1-9-8, Hughes County, a rig; Manahan Oil Co. and others' No. 3 Dixon A, NW SW NW section 12-9-8, cellar dug; Manahan Oil Co. and others' No. 3 Oliphant B, SE NW SW section 12-9-8, location; Spears & Foster's No. 1 Billington, SE SE SW section 28-7-6, Seminole County, cellar dug; Malarnee and others' No. 1 Bruner, NE NE SW section 33-7-6, rigging up rotary; Magnolia Petroleum Co.'s No. 4 B. Reed, NE NE NW section 34-8-8, location; W. B. Wells, drilling at 800 feet in No. 1-A Clark, SW NE NW section 11-10-11; Burke Greis Oil Co., rig up for No. 1 Palmer, NE NE SE section 19-10-10, Okfuskee County.

Indian Territory Illuminating Oil Co.'s No. 1 Church, SW NW NW section 13-6-5, Seminole County, which showed a production of 25 bbls. of oil and 470 bbls. of water at 3,838 feet, has been plugged back to 3,815 feet. Dolomite was topped at 3,775 feet. It had not been tested at the new total depth.

Atlantic Oil Producing Co.'s No. 1 Vierson, NE SW SE section 8-6-7, Seminole County, which found a hole full of water at 4,040 feet, was plugged back to 3,905 feet and drilled to 3,975 feet. It tested two bailers per hour of oil. It was then shot and acidized at 3,975 feet, but had not been tested.

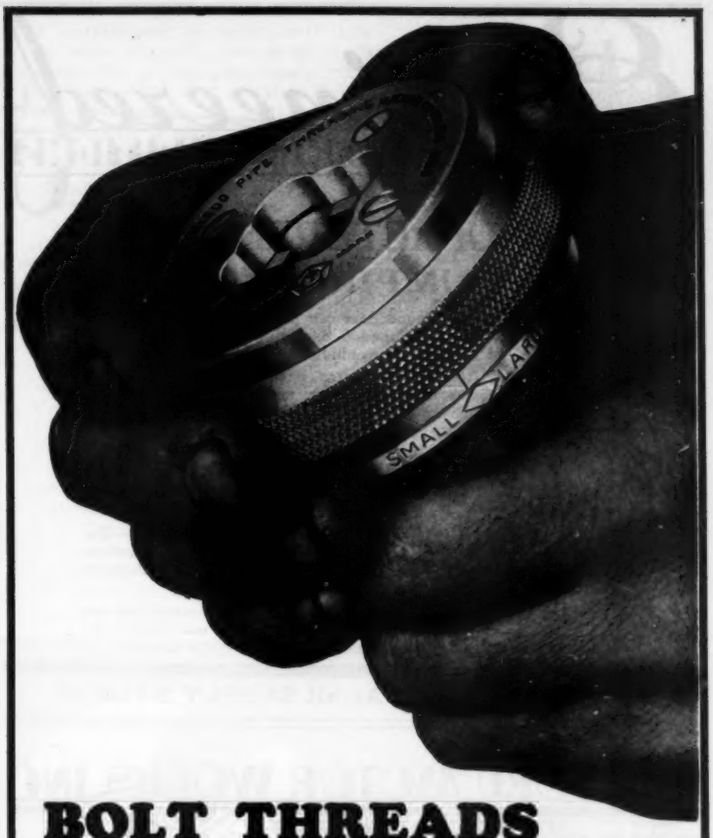
A. L. Spiers' No. 3 Aldridge, C SW NE section 7-6-8, had Gilcrease sand at 2,824-39 feet and flowed 150 bbls. of oil in 18 hours.

Helmerich & Payne's No. 1 Wilsie, SW SW SE section 7-7-4, Pottawatomie County, had Hunton lime at 3,776, total depth 3,846 feet. It was acidized with an added 200-bbl. oil load. Later it flowed 300 bbls. of net oil in four and one-half hours.

The Texas Co.'s No. 3 Janey, NE NW SW section 11-7-6, Seminole County, deepened from first Wilcox at 4,470-4,507 feet to second Wilcox at 4,585-4,605 feet, which opened a hole full of water, was plugged back to 4,421 feet and acidized. It pumped 25 bbls. of oil net in 24 hours.

E. W. Jones' and others' No. 1 Ferguson, 1,195 feet north and 150 feet east of SW cor. section 29-7-8, found Simpson Dense at 4,097 feet and was drilling at 4,115 feet with the well flowing by heads.

Burke-Greis Oil Co.'s No. 1 McDaniel, NE NE SW section 31-10-6, Seminole County, found nothing in Wilcox sands at 4,292-4,350 feet and 4,366-4,435 feet, total depth, and it



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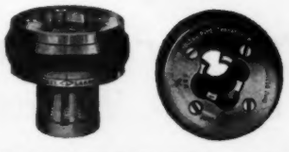

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will be plugged back to test Hunton lime.

E. W. Jones and Tom Phillips' No. 1 Morton, SW NE SW section 36-8-4, Pottawatomie County, had Wilcox sand at 4,346-50 feet, total depth. It pumped 67 bbls. of oil in 16 hours.

Stekoll and others found a 2,000,000-foot gas production at 890 feet in No. 2-A Detzler, 1,100 feet from south and 1,120 feet from east lines of NE ¼ section 2-10-11, Okfuskee County.

Tom Phillips and others' No. 1 Bynam, C S half SW NW section 26-11-6, flowed and swabbed 300 bbls. of oil in 24 hours and later 196 bbls. in 24 hours, but cut 8 per cent with water on the second day. It produces from Hunton lime at 4,124-51 feet.

Dry Bromide Test

Ada Petroleum Co.'s deep test, No. 1 Simmon, CWL NW NW section 8-3-6, a wildcat in northern Pontotoc County, was dry and abandoned at 4,887 feet. It found the top of the Bromide at 4,545 feet and sands at 4,660-4,720 and 4,747-85 feet, but they were barren.

Osage County

Thirteen wells were completed in Osage County. Four were dry and the others of little importance. The completions with sand depths and results follow:

Barnsdall Oil Co.'s No. 14, SW SE SW section 4-20-12, sand at 538-45 feet, 15 bbls.

Midco Oil Co.'s No. 4, SE cor. SW section 24-21-8, dry and abandoned at 2,460 feet.

Johnson Oil & Refining Co.'s No. 15, 330 feet south and 1,220 feet west of C section 30-21-9, dry and abandoned at 2,378 feet.

Higgins & Coopers' No. 1-A, NW cor. SE NE section 14-21-10, sand at 1,871-1,911 feet, 15-bbl. pumper.

J. R. Higgins' No. 16, NE SW SE section 25-23-8, dry in Granite at 2,475 feet after deepening from 2,200 feet, abandoned.

Barnsdall Oil Co.'s No. 20, NE cor. SW SE SE section 18-23-12, sand at 1,520-60 feet, 8-bbl. pumper.

Champlin Refining Co.'s No. 1, SE cor. NE section 17-24-7, sand at 2,575-2,601 feet, shot with 60 quarts, swabbed and flowed 140 bbls. of oil in 24 hours.

Continental Oil Co. and Gypsy Oil Co.'s No. 15, NW SE NE section 21-24-7, sand at 2,580-2,669 feet, shot with 150 quarts, 220 bbls. in 24 hours.

Peters Petroleum Corp. and Sinclair Prairie Oil Co.'s No. 9, SE SW NE section 24-24-7, Siliceous lime at 2,737 feet, total depth 2,816 feet, flowed 163 bbls. the first nine hours, but later to 92 bbls. a day through tubing.

Barnsdall Oil Co.'s No. 2, SW cor. NW SE section 23-24-10, sand at 1,795-1,858 feet, swabbed 18 bbls. in 24 hours.

Morrison & Alexander's No. 4, NE cor. SE section 35-25-11, sand at 1,668-1,725 feet, shot with 120 quarts, flowed at the rate of 100 bbls. a day.

Plymouth Oil Co.'s No. 5, NE cor. NW SE SE section 36-25-11, was abandoned as dry at 1,752 feet.

Ross Oil & Gas Co.'s No. 5, NW cor. SE SW SE section 22-28-10, Peru sand at 1,300-50 feet, pumped 30 bbls. initially.

New work in the county included The Texas Co. and Sinclair Prairie Oil Co.'s No. 13, SW cor. NW section 30-25-8, location; Philtex Oil Co.'s No. 18, NE cor. SW NE SE section 21-25-12, digging pits.

Noble County

Carter Oil Co. completed No. 2 Pfeiffer, 390 feet from south and 660 feet from west lines of SE ¼ section 33-20-2w. It made a potential rating of 1,721.67 bbls. from 4,399-5000, 4,993-5,011 feet and 5,060-5,130 feet.

Stanolind Oil & Gas Co.'s No. 2 Kolb, 385 feet north and 660 feet east of C section 33-20-2w, had Wilcox sands at 5,000-53 feet and 5,108-57 feet. It was good for 488 bbls. in 24 hours and was completed.

In the Polo pool, Noble County, Skelly Oil Co.'s No. 2 Hannah, SE SW SW section 22-22-2w, flowed 4,243 bbls. in 24 hours after a 2,500-gallon acid treatment and was completed. Wilcox sand was topped at 4,905-30 feet.

Stanolind Oil & Gas Co.'s No. 6 DeBord, SE NW SW section 27-22-2w, was completed in Wilcox sand at 4,844-81 feet. It flowed 1,398 bbls. in 24 hours.

Six months after it started to drill and five months after it first hit the pay Midco Oil Co.'s No. 1-A Yost, 800 feet from west and 400 feet from north lines of NE ¼ section 22-23-2w, Billings pool, was completed flowing 502 bbls. by heads in 24 hours at a total depth of 4,227 feet. There was no water. It was an effort to shut off water that delayed the owners in completing the well.

In the Lucien pool, Noble County, Sinclair Prairie Oil Co.'s No. 2 Frederick, 385 feet from south line and 660 feet from east lines of NE ¼ section 33-20-2w, was shot with 20 quarts at 5,054-74 feet and swabbed and flowed 180 bbls. in 24 hours. It was not completed.

Shell Petroleum Corp. was building rig for No. 1 Watts, SW SW SE section 22-22-2w, Polo pool. Carter Oil Co., moving in tools to deepen No. 1 Pfeiffer, C N half NW SE section 33-20-2w, Lucien pool, from 5,023 feet.

Oklahoma County

In the Oklahoma City field British American Oil Co.'s No. 1 Military, 65 feet south and 347 feet west of C section 34-12-3w, had Wilcox sand at 6,418-6,519 feet and produced on gas lift 427.19 bbls. in six hours. It was given a potential rating of 1,711.38 bbls.

In the Britton area in Oklahoma County, J. E. Mabee and others completed No. 1 Haskins, 595 feet from south and 993 feet from east lines of NE ¼ section 20-13-3w, in Simpson sand, after plugging back from 6,846 to 6,690 feet. It flowed 105 bbls. in 24 hours, but several days earlier it had flowed 656 bbls. in 15 hours following a 7,000-gallon acid treatment.

Mid-Continent Petroleum Corp.'s No. 1 Dahl, NE cor. NW section 8-13-3w, Edmond pool, is a location for 6,500-foot test.

Kay County

Robinson Drilling Co. and others' No. 1 Hermes, SW SW NW section 6-26-4, Kay County, was abandoned as dry at 3,937 feet. It had Wilcox sand at 3,930 feet.

Home Natural Gas Co.'s No. 1-A Smith, C NE NE section 7-28-1e, was completed a 2,000,000-foot gasser from sands at 545 to 945 feet, total depth.

Lincoln County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 3 Dawson, 990 feet north and 550 feet west of C section 4-14-3, Lincoln County, filled 500 feet with oil and water

from Wilcox sand at 5,143-53 feet and was plugged back to 5,149 feet.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Crawford, NE cor. SE section 35-15-2e, Lincoln County, set 13-inch pipe at 149 feet. Same companies' No. 1 Holland, NW SW NE section 4-14-3, is a rig.

Ellis County

Anderson & Kerr and others are testing out a 10,000-foot block in Ellis County, on the western border of the state. No. 1 Teeter, C SE SE section 2-17-25w, was drilling at 2,000 feet.

Caddo County

Wasteka Oil Co.'s No. 1 Milton, SW cor. SE section 26-6-10w, Caddo County, was at a total depth of 5,169 feet with a 15,000,000-goot gas production.

Payne County

Amerada Petroleum Corp. and others were building rig for No. 1 Gassoway, NE NE NE section 33-19-3, in the Stillwater pool, Payne County.

Southern Fields

Mudge Oil Co.'s No. 2 Cox and others, NE SE NW section 25-1s-3w, Carter County, was dry and abandoned at 2,791 feet.

Raisen Brothers' No. 19 Brown, SW NE SE section 2-2s-5w, Stephens County, is a 6-bbl. well from sands at 624 and 653 feet; Shirley Clum's No. 2-A Gilmore 3, SW NE SE section 10-2s-5w, 6-bbl. pumper at 820-62 feet; L. A. Wilkins' No. 6 Crump, NW NE NE section 15-2s-5w, 2-bbl. well at 815-39 feet.

New work included Phillips Petroleum Co.'s No. 2 Tucker, SE NE NW section 29-2s-3w, Carter County, moving in rotary tools; Skelly Oil Co.'s No. 1 Baker, NW NE NE section 20-2s-2w, location; J. C. Davis' No. 1-A Adams, C NW SE section 20-1s-9w, rigging up rotary tools; William Angle and others' No. 1-A Dook, SE SW SW section 1-1s-5w, Stephens County, location for a 3,500-foot test; B. B. Bacon and others' No. 4 Fahy, 760 feet from south line and 570 feet from west line of SW ¼ section 21-2n-10w, Comanche County, machine rigging up; G. M. Felts' No. 1 Felts, SE cor. NW NW section 6-8s-6e, Marshall County, drilling at 105 feet; W. T. Singley's No. 1 Vickers, NW SW NW section 22-7s-4e, Marshall County, spudded; Levell Coal Co.'s No. 13 Eppler, NE cor. section 36-7s-5e, Marshall County, rigging up machine; Neff & Godfrey, 1,200 feet south and 270 feet east of NW cor. section 1-5s-6e, machine in for a test of geological formations, in a wildcat area.

Gypsy Oil Co.'s No. 1 Southerland, NE SE SE section 31-1-19w, Jackson County, swabbed 38 bbls. in six hours at 2,638 feet, and was drilling.

Sinclair Prairie Oil Co.'s No. 1 Stockton, SE SE SW section 26-6s-2w, Love County, was shut down at 6,590 feet, after Schlumberger test showed water. Amerada Petroleum Corp. and Stanolind Oil & Gas Co.'s No. 1-A Westheimer & Daube, SW SE SW section 27-6s-2e, topped Woodford at 1,750 feet and was drilling at 2,350 feet.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Nov. 16.—On the Aldersyde structure east of Turner Valley, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, section 13-20-28w5, has encountered a second oil sand around 6,530 feet. Under fairly heavy back pressure it produces a high-grade white naphtha, while with less pressure a somewhat heavier product is secured. The naphtha is similar to the Turner Valley product except that it has no sulphur odor. Ranchmen's No. 1 is almost due east of the Home section in the older area of South Turner Valley. The formations apparently dip decidedly toward the east, as the Ranchmen's well started in the Paskapoo and drilled more than 4,300 feet before it got the Benton shale, which is the top formation in the main producing areas of Turner Valley. The cardium marker, encountered at 1,040 feet in Home Oil Co.'s No. 5 in South Turner Valley, was met at 5,840 feet in the Ranchmen's well, indicating 4,440 feet greater depth. From 6,410 feet steady shows of oil have met in a tight sand with an increasing gas flow. It is being deepened into the second sand for commercial production. Farther south and west in the same area, Globe Royalties' No. 1 had derrick up in LSD 3, section 2-20-29w4.

South Turner Valley

In section 28-18-2w5, South Turner Valley, British Dominion Oil & Development Corp.'s No. 4, LSD6, has resumed from 6,210 feet after a shutdown due to bad weather. It is more than 372 feet in the Madison lime with considerable wet gas. Renfrew Royalties' No. 1, LSD 3, is preparing to run casing to the top of the lime at 6,020 feet.

In Section 21-18-2w5, Union-Freehold Oil Corp.'s No. 1, LSD 8, is sidetracking below 5,288 feet, about 320 feet off the old bottom. In the southeast corner, Highwood-Sarcee Oils' No. 2, LSD 1, is below 435 feet.

North Turner Valley

In North Turner Valley, Model Oils' No. 3, LSD 1, section 22-20-3w5, has resumed after cementing casing 21 feet in the lime at 5,755 feet depth. It has changed to 3½-inch drill rods to drill into production. Location is about 800 feet south of Model's No. 1 in LSD 8, which got its production high in the lime and has maintained for five years a steady average of around 140 bbls. of high-grade crude per day. Some 700 feet southeast, Royalite Oil Co.'s No. 27, LSD 4, section 23-20-3w5, is below 1,470 feet and making about 100 feet a day.

Alberta Border Fields

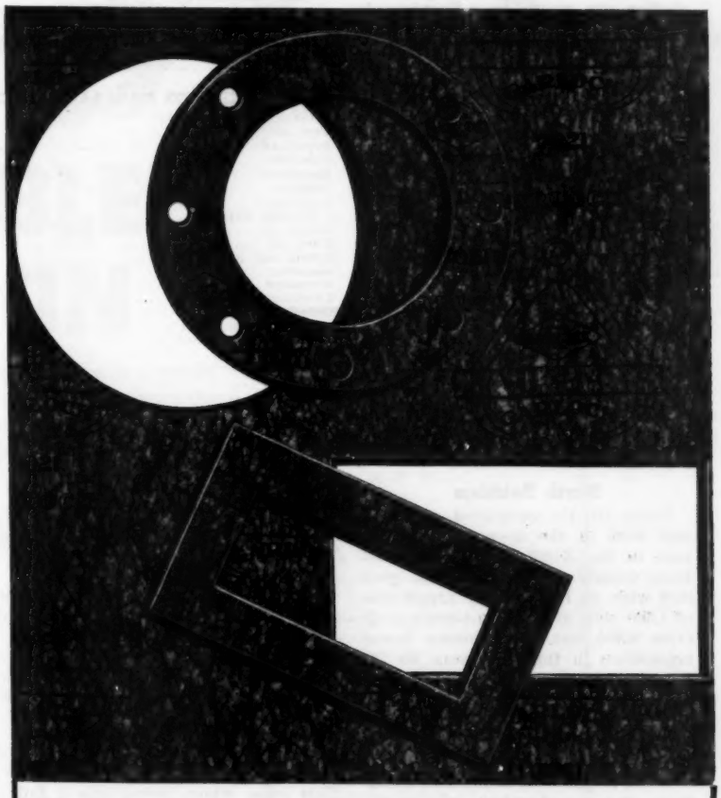
On the Del Bonita structure, in the southern Alberta border area, Terminal Oil Co.'s No. 1, NE section 18-1-21w4, has cleaned out to the top of the Madison lime at 4,894 feet and will start drilling into production as soon as water clearance is given by provincial officials. It had a good show of green crude at the Ellis-Madison contact. Sunshine Oil Co. of Vancouver is reported to be assisting. Clinch Petroleums, Ltd., of Vancouver, British Columbia, holding acreage on this structure, has been registered in Alberta with S. H. Adams of Calgary as attorney. Excelsior Petroleum, Ltd., has been incorporated with $50,000 capital and office at Lethbridge, Alberta, to operate in the southern part of the province.

In the Skiff field, Devenish Petroleums, Ltd., of Calgary has completed a small refining plant and placed its No. 3 well in production.

In the Cardston area, Franco Oils' No. 1, LSD 6, section 5-3-25w4, is preparing to resume from 2,700 feet after a shutdown of several months. Location was made by Doctor Hintze of Salt Lake City, geologist for the company, and it is expected to get oil or gas in commercial quantities before the Madison lime is reached, within 2,000 feet of additional drilling.

Saskatchewan Test

In Saskatchewan, the Blackfoot Hills, southwest of Moose Jaw, will be tested by Blackfoot Development Co., incorporated by Winnipeg interests. It has 20,000 acres under lease. The area has been reported on by Dr. D. F. Macdonald of Antigonish, Nova Scotia, and by W. B. Fry. A previous test standing unfinished at 1,750 feet indicated good prospects of production.



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California Field Report

By
L. P. STOCKMAN

OIL PRODUCTION AT HIGHEST RECORD IN PAST FIVE YEARS

LOS ANGELES, Calif., Nov. 18.—Crude oil production in California, which early this week reached the highest level recorded within the past five years, may reach 700,000 bbls. per day in the near future unless the state of California is successful in its attempt to substantially reduce production of natural gas in the Kettleman North Dome and Mountain View fields. Operators in the latter district have a few days in which to complete their program which contemplates reducing gas waste to approximately 5,000,000 feet per day. The Kettleman North Dome field, which has been producing approximately 425,000,000 feet of gas per day during the past few weeks, is scheduled to be brought under control within 30 days if state officials succeed in securing an injunction in the Superior Court at Hanford prohibiting further waste of gas. Elimination of gas waste in the Mountain View and Kettleman North Dome fields can be accomplished only by restricting the production of crude, and it is obvious either mutual or compulsory regulation of gas production in these fields will be sympathetically reflected by a decrease in crude production. The significance which attaches to this lies in the fact that state production of crude oil will be drastically reduced and marketing conditions stabilized.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	November 3		October 27			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Fuel oil	.....	.....	.....	.....	.....	11,061,371
Diesel and gas oil	.....	.....	36,531	5,219	563,629	1,174,531
Gasoline	188,022	26,860	5,088	727	6,354,000	6,747,152
Kerosene	70,460	10,066	.....	.....	823,917	898,666
Asphalt	.....	.....	.....	.....	.....	70,019
Other finished oil	.....	.....	.....	.....	.....	54,778
Foreign export:						
Crude oil	114,200	16,314	192,318	27,474	11,033,606	6,781,922
Fuel oil	.....	.....	534,453	76,350	10,477,070	11,030,252
Diesel and gas oil	111,798	15,971	132,298	18,900	3,873,465	3,436,967
Gasoline	169,921	24,274	53,382	7,626	5,746,268	4,135,641
Kerosene	3,471	496	42,590	6,084	1,059,670	1,479,596
Other finished oil	.....	.....	.....	.....	.....	37,955
Other unfinished oil	.....	.....	.....	.....	99,847	230,745
Coastwise-domestic:						
Crude oil	69,947	9,992	277,249	39,607	5,867,731	7,053,296
Fuel oil	149,477	21,354	225,106	32,158	8,049,836	8,140,476
Diesel and gas oil	12,001	1,714	7,209	1,030	1,050,028	616,471
Gasoline	190,282	27,183	288,586	41,227	9,560,226	11,321,676
Kerosene	1,772	253	2,901	414	159,158	137,963

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Fuel oil	.....	.....	.....	.....	.....	110,650
Diesel and gas oil	.....	.....	.....	.....	158,152	599,612
Gasoline	.....	.....	.....	.....	.....	365,283
Kerosene	.....	.....	.....	.....	149,715	276,593
Asphalt	.....	.....	.....	.....	484,597	.....
Lubricants	.....	.....	.....	.....	57,325	46,693
Foreign export:						
Crude oil	83,627	11,947	.....	.....	2,126,318	1,601,165
Fuel oil	88,665	12,666	112,419	16,060	2,038,656	1,879,829
Diesel and gas oil	.....	.....	9,028	1,290	913,679	1,164,102
Gasoline	5,112	730	9,880	1,411	2,498,318	2,605,526
Kerosene	.....	.....	.....	.....	627,396	1,008,223
Lubricants	.....	.....	.....	.....	173,507	164,257
Other finished oil	.....	.....	.....	.....	.....	2,760
Other unfinished oil	.....	.....	.....	.....	.....	5,750
Coastwise-domestic:						
Fuel oil	.....	.....	172,951	24,707	5,655,683	4,685,734
Diesel and gas oil	.....	.....	.....	.....	175,932	119,036
Gasoline	29,462	4,209	104,332	14,905	3,638,334	4,710,148
Kerosene	.....	.....	.....	.....	76,785	82,434

North Belridge

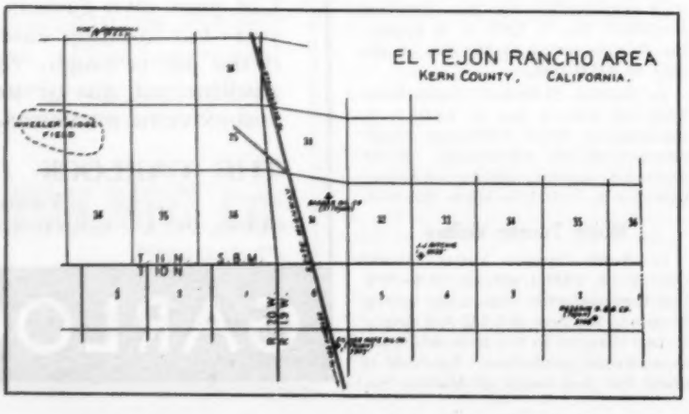
Union Oil Co. completed an excellent well in the deep Wagonwheel zone in the North Belridge field of Kern County during the week, credited with an initial daily production of 1,680 bbls. of clean 42.4-gravity oil from 8,360 feet. The Union's latest acquisition in this field was No. 19 Belridge and the initial daily production of the new well represents only a small part of its potentiality. The Union and other operators in the North Belridge field are severely restricting production, and consequently there was no advantage in turning this new well loose. It is interesting to note, however, that No. 19 Belridge, which is flowing through a 22/64-inch bean under a pressure of 3,175 pounds on the casing, is producing 15,130,000 feet of gas per day in addition to the crude oil. In addition to completing No. 19 Belridge, the Union succeeded in recovering the fish which has been retarding drilling operations in No. 20 North Belridge, officially carried on the records as No. 7 Gibson.

Belridge Oil Co. should complete the next new well in the North Belridge field of Kern County as its No. 33-35 in section 35-27-20 is rotating in the Wagonwheel zone below 8,000 feet. Continental Oil Co. is expected to complete No. 6 Result before the close of the year, and Standard Oil Co. will probably have its No. 3 McPhail on production about the same time. The Standard recompleted No. 2 McPhail a few weeks ago and the large production secured has resulted in the staking of location for No. 4 on the same lease. The development of the McPhail property by the Standard is especially interesting in view of the fact the company failed to develop commercial production in the Temblor a few years ago, and subsequently suspended drilling operations. The property lay idle for some time following the failure to develop production in the Temblor, but the Standard resumed drilling when Belridge Oil Co. found the underlying Wagonwheel zone highly productive. This lease, which looked like a failure as far as Temblor production was concerned, has shown substantial production in the Wagonwheel zone. Union Oil Co. is nearing the 10,400-foot level in No. 1 Lillis-Welsh in the Kettleman North Dome field, which may reach a depth comparable with that reached by Ed McAdams before a premature explosion forced a suspension of drilling operations about two years ago. No. 1 Lillis-Welsh had oil in the bottom of this hole at 10,944 feet and it is this potentially productive horizon that the Union Oil Co. is attempting to reach.

Mountain View

Three new wells were chalked up in the Mountain View field of Kern County during the week, and a check of development work under way indicates the probable completion of several more in the next few weeks. Standard Oil Co., which has been pursuing an aggressive development program in this field, completed No. 6 Ranton at 5,380 feet, brought in flowing at the rate of 1,130 bbls. per day after the hole had been completed with a 7-inch liner including 242 feet of perforated. The Standard, which has six strings of tools in operation, is erecting new rigs for three additional wells, all of which are scheduled for immediate work. Gilmore-Snyder Oil Co. has completed No. 3 Mullaney in section 24-30-28, brought in flowing 1,060 bbls. of clean 31.2-gravity oil and 2,490,000 feet of gas per day from 5,411 feet after the hole had been finished with a 6⅝-inch liner including 252 feet of perforated. Immediately upon the completion of this well Gilmore-Snyder Oil Co. began rig construction for No. 4 Mullaney, and tentative plans contemplate the starting of drilling operations on November 24.

Wood-Callahan Oil Co. has recompleted its No. 1 National in section 30-30-29, and this well was returned to production flowing 1,588 bbls. of clean 32.3-gravity oil and 1,990,000 feet of gas per day. No. 1 National was redrilled and deepened to 5,884 feet and finished with a 4¾-inch liner carrying 224 feet of perforated. The successful conclusion of drilling operations on this well has prompted the company to deepen No. 2 National, and drilling will be resumed at 5,640 feet. One new company entered the Mountain View field during the week and this concern, Aladdin Oil Co., is expected to start rig construction within the next few days, as location has been staked for the first well in section 19-30-29. The Shell is making exceptionally fast progress with No. 3 on Porter lease No. 2, and as a consequence this project should be ready for a production test within three weeks.



Edison

The A. T. Jergins Trust added a new well to its list of producers in the Edison field of Kern County several days ago when No. 2 Smithwick was brought in pumping 296 bbls. of 15.1-gravity oil initially from 1,276 feet after the hole had been completed with an 8⅝-inch liner carrying 299 feet of perforated. This company, which is building rig for No. 7 McCowan in section 13-30-29, is preparing to complete Nos. 5 and 8 on fee-owned acreage in section 13-30-29, and both should be completed within a few days. Shell Oil Co. has picked up the pay in No. 4 Duff and No. 4 Clare in the Edison field, and they will probably be completed on the beam during the forthcoming week. No. 2 Cauley, a recent completion of the Shell in this field, has failed to show sustained production and the company is rigging up rotary equipment preparatory to deepening. The General Petroleum, expected to com-

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plete No. 1 Speed shortly, is moving in rotary equipment for two additional wells on the Knapp lease in section 24-30-29.

Mount Poso

Shell Oil Co. completed two new wells in the Mount Poso field of Kern County early in the week, and both resulted in commercial production. No. 5 Mathew fee, bottomed at 1,767 feet, was brought in pumping 568 bbls. of relatively clean 16.7-gravity oil per day, and No. 26 Vedder in section 9-27-28 was finished pumping 608 bbls. of clean 16.6-gravity oil per day from 1,833feet. Union Oil Co. has spudded in No. 30 S. & M. and the Texas Co. will probably start work on No. 10 Vedder within a few weeks, as No. 9, a recent completion, is still holding up in good shape. J. C. Bern has abandoned No. 1 Gamba at 2,052 feet due to the failure to encounter production above this point. In the Premier section of the Mount Poso field, Ohio Oil Co. completed No. 8 Premier, brought in pumping 289 bbls. of 14.3-gravity oil per day from 2,791 feet. This well was plugged back from 2,813 feet and the hole completed with an 8⅝-inch liner including 184 feet of perforated. Out on the West Front of the Kern River field Standard Oil Co. has finished No. 5 fee in section 5-28-27, brought in pumping 104 bbls. of 15.8-gravity oil per day from 2,760 feet after the hole had been plugged back from 2,821 feet. The Standard has No. 6 fee standing cemented on top of the pay, and has rigs going up for No. 7 fee and No. 1 Ward fee. National Oil Co., which acquired a 40-acre lease from Standard Oil Co. on a royalty basis a few months ago, is preparing to complete No. 2 on this property, and the outlook is favorable for a pumping well which should average approximately 250 bbls. per day. Chanslor-Canfield Midway Oil Co. has just cemented No. 52 in section 23-28-27, and consequently should have this well tanking oil within 10 days. This company has a new rig standing for No. 50 and has material on ground for No. 53.

Midway-Sunset

Several potential producers are nearing completion in the Midway-Sunset field of Kern County, and a number of new wells are scheduled to get under way within the next fortnight. Standard Oil Co. is preparing two wells in this field for immediate production tests, and both of them, No. 30-3-D in section 3-32-24 and No. 61 M. J. & M. in section 36-12-24, show promise of resulting in commercial production. Bryan & Stone are putting the finishing touches on a new rig for a well in section 25-12-24, and an early spud is anticipated as Alford Oil Co.'s No. 2 Freed in the same section is looking rather promising. Standard Oil Co.'s No. 1 M. & T., an outpost in the Round Mountain field of Kern County, has not shown any evidence of resulting in production, although it still has possibilities, and the company is drilling ahead. Shell Oil Co. has material on ground for No. 2 Caldwell, expected to get under way in the immediate future.

Wheeler Ridge

Reserve Oil & Gas Co., which apparently discovered a new oil field in the Wheeler Ridge section of Kern County, is moving in rotary equipment to spud in No. 4 Tejon in section 2-10-19. This company has drilled three wells in the Wheeler Ridge-Tejon area, two of them being dry holes and one a small pumper which showed an initial daily production of approximately 25 bbls. The small production shown by the discovery well tends to indicate the possible existence of a small field, but at the same time it is possible the discovery well may be located out around the edge of a potential field that might prove of more importance. Western Gulf Oil Co., with two strings of tools operating in the Fruitvale field of Kern County, is building rigs for No. 5 Price & Stewart and No. 3 Parker. Two new wells, No. 1 Burlock of Western Gulf Oil Co. in section 21-29-27, and No. 1 Nichol of S. & G. Oil Co. in section 26-29-27, are nearing completion in this field, and both should be tanking oil within 10 days.

Semi-Tropic Field

In the Semi-Tropic gas field, the Fullerton Oil Co. has abandoned No. 23 in section 32-27-24 as dry at 2,453 feet, and Standard is abandoning No. 1 Chapman, section 9-27-23, for the same reason at 4,570 feet. Two deep tests are under way in the Semi-Tropic gas field of Kern County, and it would not be surprising if this deep drilling resulted in the discovery of crude oil. It appears probable, however, that operators in this field will be obliged to engage in exceptionally deep drilling as the Santa Margarita and Temblor are plunging at a sharp angle at this point. In 1923 Shell Oil Co. carried No. 1 Williams in the Semi-Tropic area down to 9,700 feet, but failed to develop commercial production. This well was off the structure, however, and cannot be considered as having any effect on deep tests now being drilled within the proved limits of gas production in the Semi-Tropic field. The deeper formations in the Semi-Tropic gas field are favorable from a geological standpoint, and it might therefore be well to watch this deep drilling because both the Santa Margarita and Temblor have been found highly productive in other San Joaquin Basin fields.

Inglewood

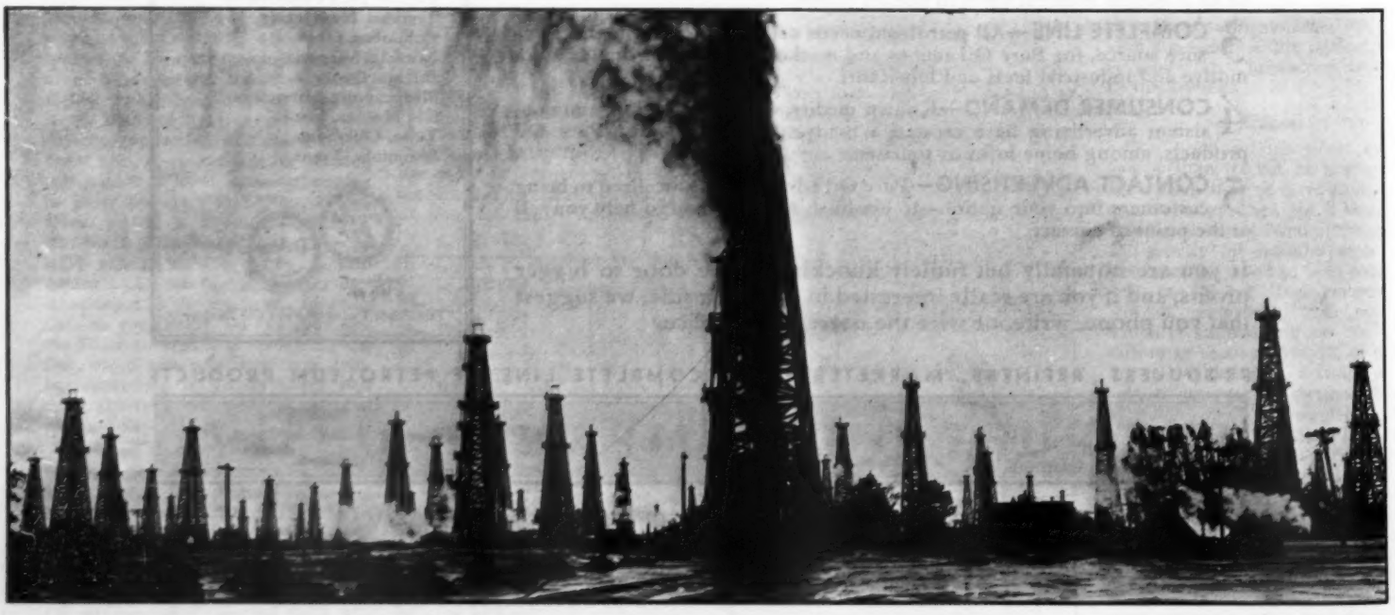
Standard Oil Co., acting as drilling agent for the Kettleman & Inglewood Corp., completed No. 21 Rubel in the Inglewood field of Los Angeles Basin during the early part of the week, and this new well was brought in flowing 492 bbls. of 32.8-gravity oil per day from 3,950 feet after the hole had been finished with a 6⅝-inch liner carrying perforations at 3,256-3,460 feet, 3,512-3,754 feet and at 3,819-3,948 feet. In addition to completing this well, the Standard started rig construction for No. 34 on Vickers lease No. 1, spudded in No. 33 on this lease and started rigging up rotary equipment in No. 22 Rubel.

Long Beach

Two new wells and one recompletion were chalked up in Long Beach field during the week and, while several additional wells are nearing completion in this field, the decline in drilling operations which has taken place during the past month can be expected to result in a smaller number of completions during the remainder of the year. The recompletion listed in the Long Beach field during the early part of the week was No. 1 Peck of Interstate Oil Co., returned to production pumping 54 bbls. of 21.6-gravity oil per day after the hole had been redrilled and deepened to 4,497 feet. Union Oil Co.'s No. 27 Long Beach Community, a new well finished at 2,739 feet after being plugged back from 2,744 feet, failed to result in a natural flow and was put on the beam. During the initial 24-hour production test this well, which was finished with a 6⅝-inch liner carrying 45 feet of perforated, pumped 56 bbls. of 23.5-gravity oil cutting 11 per cent. Pierce Petroleum Corp.'s No. 1 Signal, finished at 5,202 feet after being plugged back from 5,232 feet and finished with a 5¾-inch liner including 113 feet of perforated, was brought in pumping 186 bbls. of clean 30.1-gravity oil per day.

Santa Fe Springs

In Santa Fe Springs, General Petroleum recompleted No. 52 Santa Fe after redrilling and deepening the hole to 4,650 feet, and it was returned to production pumping 67 bbls. of 29.6-gravity oil per day. The Montebello field of Los Angeles Basin has taken a new lease on life due to the recent completion of No. 1 Estrada of Universal Consolidated Oil Co. and the result of the formation test conducted on the same company's No. 1 Farmer. The eastern extension of the Montebello field has failed to come up to expectations of some operators and the results of development work up to the present tend to indicate the probability that the field will be rather spotty and perhaps smaller in areal extent than has been generally believed. The probable field discovered by Republic Petroleum Co. in the El Segundo district of Los Angeles Basin has failed to entice operators to undertake additional development and the area is relatively quiet. Larco Oil Co., which developed mechanical trouble a few weeks ago, has cemented a second whipstock at 7,300 feet preparatory to redrilling and straightening the hole. Sovereign Oil Corp.'s No. 1 Long, in section 22-3-14, is approaching the depth at which the Schist was encountered in Republic Petroleum's discovery well, and something definite should materialize within the next week or 10 days.



Union Oil Company's No. 18 Bell, Santa Fe Springs Field, California

California Oil Field Operations for September, 1935

According to the American Petroleum Institute, total production of crude in California for September amounted to 19,210,077 bbls., an average of 640,336 bbls. per day, an increase of 40,200 bbls. per day over August.

CRUDE PETROLEUM PRODUCTION

(Figures of production and stocks are in barrels of 42 gals.)

	Total production,	Daily average		
Group No. 1:	September	Sept., 1935	Aug., 1935	Sept., 1934
Belridge—North	234,695	7,823	8,410	4,993
Belridge—South	72,286	2,410	2,527	1,905
Coalinga	614,741	20,491	20,533	18,181
Edison	103,986	3,466	3,165	644
Elk Hills	285,294	9,510	9,598	8,288
Fruitvale	186,027	6,201	5,868	3,455
Kern River	449,084	14,970	12,962	10,677
Kettleman Middle Dome	57	2	.....	403
Kettleman North Dome	2,641,990	88,066	71,910	60,340
Lost Hills	144,841	4,828	4,756	4,629
McKittrick	125,206	4,174	4,075	2,929
Midway-Sunset	1,730,014	57,667	56,268	54,077
Mountain View	1,231,209	41,040	35,203	9,321
Mount Poso	551,699	18,390	17,069	9,782
Round Mountain	240,354	8,012	6,893	4,643
Wheeler Ridge	12,464	415	422	405
Group No. 2:				
Capitan	53,877	1,796	1,761	546
Elwood	399,483	13,316	12,297	9,558
Rincon	65,551	2,185	2,048	1,263
San Miguelito	22,955	765	826	507
Santa Barbara	77,314	2,577	2,879	1,937
Santa Maria	138,747	4,625	4,364	4,710
Summerland	895	30	36	50
Ventura Avenue	1,012,575	33,753	35,468	23,443
Ventura-Newhall	121,464	4,049	4,179	3,649
Watsonville	1,800	60	60	60
Group No. 3:				
Brea-Olinda	291,793	9,726	9,539	10,311
Coyote—East	82,372	2,742	2,646	2,631
Coyote—West	292,038	9,735	9,945	8,560
Dominguez	663,558	22,119	21,733	17,331
Huntington Beach	1,283,068	42,769	43,202	39,581
Inglewood	428,302	14,277	14,233	9,325
Lawndale	7,289	243	135	145
Long Beach	2,434,805	81,160	78,514	60,146
Los Angeles-Salt Lake	22,450	748	797	809
Montebello	195,062	6,502	6,391	5,555
Playa Del Rey	528,311	17,610	16,998	7,355
Potrero	9,342	311	344	314
Richfield	232,294	7,743	7,723	8,095
Rosecrans	77,143	2,571	2,686	2,965
Santa Fe Springs	1,645,775	54,793	44,646	37,514
Seal Beach	253,627	8,454	8,801	8,219
Torrance	212,956	7,099	6,859	7,258
Whittier	33,384	1,113	1,067	918
Total September	19,210,077	640,336	600,136	468,427
Total August	18,604,220	600,136		
Increase	605,857	40,200		

OIL FIELD DEVELOPMENT

	New rigs	Active drilling	Producers completed	Daily initial output	Active producing	Abandoned wells: Drillers	Abandoned wells: Producers
Group No. 1:	up						
Belridge—North	1	6	1	340	27	..	..
Belridge—South	..	...	...	.....	163	..	..
Coalinga	..	4	...	.....	981	3	3
Edison	11	6	6	1,516	44	2	..
Elk Hills	..	...	...	.....	167	..	..
Fruitvale	2	3	1	362	76	..	..
Kern River	4	9	4	910	1,537	..	..
Kettleman Middle Dome	..	2	...	.....	.....	..	..
Kettleman North Dome	..	22	4	13,429	112	1	..
Lost Hills	..	1	...	.....	336	1	1
McKittrick	1	2	1	70	218	..	..
Midway-Sunset	1	6	4	696	2,513	4	2
Mountain View	7	16	7	12,639	96	1	..
Mount Poso	9	9	2	740	208	..	..
Round Mountain	2	1	2	2,120	72	..	..
Wheeler Ridge	1	1	...	.....	35	..	..
Group No. 2:							
Capitan	..	2	2	290	15	1	..
Elwood	..	2	1	1,425	50	..	..
Rincon	..	...	...	.....	30	..	..
San Miguelito	..	...	1	1,577	4	..	..
Santa Barbara	..	1	...	.....	65	2	..
Santa Maria	1	2	...	.....	206	1	..
Summerland	1	..	...	.....	19	1	..
Ventura Avenue	1	8	1	70	212	1	..
Ventura-Newhall	2	17	...	.....	536	1	..
Watsonville	..	...	...	.....	7	..	..
Group No. 3:							
Brea-Olinda	..	1	...	.....	370	1	..
Coyote—East	..	...	...	.....	82	..	..
Coyote—West	..	2	1	1,389	53	..	..
Dominguez	1	7	4	2,732	92	..	..
Huntington Beach	3	5	2	194	486	..	..
Inglewood	..	2	2	599	215	..	..
Lawndale	..	2	...	.....	7	..	..
Long Beach	4	46	8	2,017	1,242	..	20
Los Angeles-Salt Lake	..	...	...	.....	128	..	..
Montebello	2	11	...	.....	181	..	..
Playa Del Rey	1	6	3	695	190	1	..
Potrero	..	...	...	.....	11	..	1
Richfield	2	1	...	.....	248	..	..
Rosecrans	..	...	...	.....	76	..	..
Santa Fe Springs	3	6	2	220	600	..	..
Seal Beach	..	2	...	.....	109	..	1
Torrance	1	...	...	.....	488	..	1
Whittier	..	...	...	.....	161	..	..
Miscellaneous drilling	7	35	...	.....	.....	8	..
Group No. 4:							
Buttonwillow gas field	..	...	1	Gac	24	..	..
Dudley Ridge gas field	..	2	...	.....	1	1	..
Semi-Tropic gas field	3	9	1	Gas	.....	3	..
Tracy gas field	1	2	1	Gas	.....	..	..
Total September	72	259	62	44,050	12,502	33	29
Total August	110	258	78	48,407	12,318	33	25
Increase	*38	1	*16	*4,357	184	..	4
Average for year 1934	53	196	38	47,553	11,053	21	17
Average for year 1933	30	124	21	22,842	9,199	14	18
Average for year 1932	18	108	15	13,069	8,928	16	14

*Decrease.

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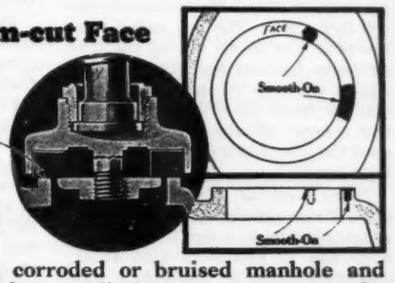

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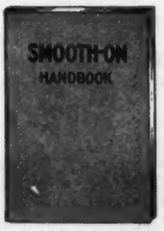

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Eastern Field Report

By STAFF CORRESPONDENT

BEAVER COUNTY ORISKANY TEST IS OF PRIME INTEREST

PITTSBURGH, Pa., Nov. 18.—Of prime interest to eastern operators is the result obtained in deepening the test of John Galey and others on the William Graham farm on Brush Run in South Beaver Township, Beaver County. After reaching the Oriskany sand at 4,542 feet and at 4,545 feet having over 500,000 feet of gas a day, the hole was cased, but due to the faulty set of the packer it was necessary to pull the casing. From then on progress was halted by a series of caves. After clearing the hole drilling was resumed and as the bit neared 4,550 feet the volume increased to 1,200,000 feet a day. At 4,550-51 feet water broke through with an estimated 5 bbls. an hour, which caused further work to be suspended. It was decided to plug off the Oriskany at some point in the Lime and save the gas in the Thirty Foot and Hundred Foot sands, which had 250,000 feet a day each.

Difficulty is now being had in plugging the hole. With a plug, cement and 400 feet of rock in the hole, the well is still gassing. A piece of 2-inch was plugged in the top of the pipe and on a test the volume is 600,000 feet a day. The test ended when the plug was blown out of the hole. As there has not been the expected rise of water in the hole, an attempt may be made to drill out the hole and cement off the water and produce the gas, natural, from the Oriskany sand.

There were 31 operations in the lower Eastern fields during the week, which resulted in 4 dry holes, 15 gas wells and 12 producers with an initial production of 271 bbl. a day. Southeast Ohio had most of the new production, although there was one fair test in Southwest Pennsylvania, and there were also some very fair gas wells completed in Ohio.

SOUTHEAST OHIO

Apart from completions, the most interesting feature of Southeast Ohio is the deep test drilling in Section 21, Brush Creek Township, Jefferson County. The top of the Corniferous Lime was at 4,530 feet and the tools are now 268 feet in the Lime with no evidence of the Oriskany sand expected at 4,743 feet. The total depth is now 4,798 feet and drilling will be continued. The test is being drilled by Brooks Johnston and others on the Clyde Smith farm.

Reports of another test being drilled by Frank Lyons and others in Franklin Township, Harrison County, which is drilling below the Oriskany sand, report gas in the Clinton sand at 5,600 feet.

A very fair gas well was completed in Athens County, Ohio Fuel Gas Co. No. 6,025 on the Sunday Creek Coal Co. in Fraction 17, Dover Township, in the Clinton sand at 3,872 feet. It has 3,000,000 feet a day.

In Belmont County a good oil strike was made. Union Gasoline & Oil Corp. completed a second test on the Albert Snelco farm in section 26, Richland Township, in the Berea sand at 1,881 feet. It produced 70 bbls. the first day, natural. No. 1 on this farm started off at 25 bbls. a day.

In Coshocton County Preston Oil Co. completed No. 5 on the F. H. Donaker farm in section 17, Perry Township, in the Clinton sand at 3,162 feet. It produced 29 bbls. the first day, natural, and has 1,400 feet of fluid in the hole. After shot it is expected to make a 75-bbl. pumper.

In Licking County Pure Oil Co. completed No. 5 on the H. E. Loughman farm in the SW quarter of section 1, Hopewell Township. It was drilled in the Clinton sand at 3,122 feet and produced 65 bbls. the first day after shot. On the west side of the city of Newark, in Newark Township, Wehrle Co. completed a test on the J. C. Shaw farm in the Clinton sand at 2,390 feet. It is a 200,000-foot gas well.

In Medina County, section 13, Liverpool Township, Ed. Obermiller completed a test on the Jacob Steingass farm at 2,800 feet, a gas well gauging 2,500,000 feet a day.

In Noble County North Hill Oil Co. completed a test on the S. C. Turner heirs farm in the SW quarter of section 5, Jefferson Township, in the Macksburg 500 Foot sand at 750 feet. It produced 3 bbls. the first day, natural. This is called, locally, second or third crop production and is within well-defined limits and close to oil production.

In Perry County Hopewell Fuel Gas Co. completed a test on the D. J. Jones farm, SE quarter of section 36, Thorn Township, in the Clinton sand at 2,780 feet. It has 2,000,000 feet a day along with 10 bbls. of oil whenever the pressure is opened into a tank. The well has not yet been swabbed or cleaned out. In the same section this company completed a test on the Grover Lonas farm which reached the Clinton sand at 2,839 feet. It gauges 1,300,000 feet a day with only a small showing of oil. In the NE quarter of Section 13, Monroe Township, E. C. Marshall and others completed No. 12 on the Newberry tract in the Berea sand at 1,145 feet. It produced 7 bbls. the first day after shot.

In Tuscarawas County Capital Drilling Co., Inc., completed No. 3 on the Stewart and Nancy Asher farm in Section 19, Washington Township. It was drilled in the Niagara Lime at 3,738 feet and it will make about 3 bbls. a day, but on account of the investment to produce it, it will be pulled.

In Washington County G. T. Gale and others completed No. 2 on the Gale heirs farm in the SW quarter of section 27, Newport Township, in the First Cow Run sand at 420 feet. After shot it produced 2 bbls. the first day. In the NW quarter of this section George Pickens and others completed No. 12 on the Alvin Adkins farm in the First Cow Run sand at 422 feet. With a showing of a half barrel a day, natural, after shot it improved to 3 bbls. the first day. In the Muskingum Valley, Lot 77, section 3, Muskingum Township, Charles H. Vaughn and others drilled on the C. W. Decker farm through the Macksburg 500 Foot sand, a total depth of 766 feet, and it was a dry hole.

SOUTHWEST PENNSYLVANIA

An extension of about a mile in new production was indicated with the completion of Union Gasoline & Oil Corp.'s test on the Charles Vankirk farm in Amwell Township, Washington County. The top of the Fifth sand was at 3,005 feet with oil showing at 3,057-65 feet. The oil filled up 1,100 feet in two hours and 2,200 feet in six hours, and the 6⅝-inch casing is now standing full. It is estimated good for a 50-bbl.-a-day start. It is south and west of the pool on the G. L. Walker farm and north of recent production on the W. A. Dodd farm and is the largest of recent strikes.

The only other completion was in Richhill Township, Greene County, where Wasmuth and Callahan completed No. 3 on the Daniel Goodwin heirs farm at 2,660 feet. The Fifty Foot sand was at 2,538-55 feet with about 20,112 feet of gas showing at 2,539-42 feet.

In Greene County J. I. Eddy & Co. are drilling No. 5 on the J. G. Fordyce farm in Gilmore Township at 750 feet. In Aleppo Township G. B. Patterson has reached 2,990 feet on the John S. Wise farm.

In Morris Township, Greene County, Carnegie Natural Gas Co. found the Gordon Stray sand at 2,940-74 feet and the sand at 2,990 feet with water showing at 2,992 feet. In Springhill Township James H. Null is down 3,037 feet in deepening the David Null test.

In South Franklin Township, Washington County, Carnegie Natural Gas Co. has reached over 1,500 feet on J. Dodd farm. Top of the Salt sand was at 1,480 feet and there is 1,500 feet of 8-inch casing in the hole.

In Richhill Township Greene County, Lewis & Co. are drilling at 719 feet in the Pittsburgh Coal on the Samuel Chess farm. David Braddock is drilling at 1,675 feet on the Newton Braddock farm, No. 8. Myers, Hoskinson and others are drilling deeper on the Lucinda Wright farm in Morris Township. The start was at 1,872 feet and it is now 1,960 feet.

In Amwell Township, Washington County, Carnegie Natural Gas Co. is down 2,770 feet in No. 2 on the C. W. Dunn farm. Top of the Thirty-Foot sand was at 1,740 feet. Moore-Orrill and others are drilling at 2,280 feet on the C. E. Kackney farm.

In East Findley Township, Washington County, Parkinson and Dague are rigging up on the Chris Ealy farm, about 1 mile west of East Findley. In South Franklin Township, H. G. Whitfield is rigging up on the Judson Iams farm. Here it is hoped to pick up the Dinkard sand production.

In Chartiers Township, Washington County, Keystone Gas Co. is fishing at 925 feet on the Joseph Allison farm. In Mount Pleasant Township, A. Bronley & Co. are drilling on the Fred Schaffer farm.

Deep Test

In South Shenango Township, Crawford County, Carnegie Natural Gas Co. is drilling the deep test on the Gertrude Scott farm at 3,320 feet and approaching the Newburg sand.

WEST VIRGINIA

There were three producers completed in West Virginia. In Calhoun County C. E. Kingsbury and others completed No. 5 on the Homer and Lizzie Lynch farm in Lee district in the Maxon sand showing for 15 bbls. a day.

In Ritchie County, Swingle Brothers completed a test on the Ellen Burge farm in Grant district at 1,834 feet or through the Squaw sand. It is producing 4 bbls. a day from the Maxon and Keener sands.

In Meade district, Tyler County, Ohio Oil & Gas Co. opened a fair producer in old territory on the Nathan Lawson farm, drilled to 1,500 feet, through the Maxon sand, producing 20 bbls. a day from the Salt sand.

Gas Wells

In Boone County Owens Illinois Glass Co. completed a test on the Mamie Ballard and others farm in Scott district in the Berea sand at 1,840 feet. Big Lime was at 1,067-1,273 feet; Big Injun sand at 1,273-1,310 feet; Berea sand at 1,744 feet with gas showing at 1,746-56 feet, 256,000 feet a day. In Washington district this company drilled No. 13 on the Little Coal Land Co. to 4,187 feet. Big Lime was at 1,398-1,592 feet; Big Injun sand at 1,592-1,630 feet; Berea sand at 2,079-2,100 feet, with the Brown shale from 3,291-3,636 feet. The Corniferous Lime was at 4,149-87 feet. There was a showing of 9,550 feet of gas a day at 2,081-85 feet. The well is being plugged.

In Washington district, Boone County, G. L. Maebon drilled deeper No. 2 on the E. W. Fry farm to 3,050 feet. It was started at 1,905 feet.

Brown shale was at 2,183-3,050 feet with about 220,000 feet of gas showing at 2,410-2,925 feet.

In Cabell County R. H. Adkins and others completed No. 5 on the H. S. Fraley farm in McComas district at 1,330 feet. It gauges 2,160,000 feet a day. Big Lime was at 1,102-1,265 feet; Big Injun sand at 1,325 feet and shut down at 1,330 feet. There were two gas pays, one at 1,182-1,250 feet and again at 1,325 feet to the bottom. In this district United Fuel Gas Co. completed No. 4,573 feet, a test, on the Walter Ray farm at 1,336 feet. It gauges about 200,000 feet a day. Big Lime was at 1,087-1,257 feet; Big Injun sand at 1,305-36 feet with gas at 1,333-34 feet.

In Marshall County, B. L. Frye completed a test on the F. R. Doman farm in Webster district in the Fourth sand at 2,812 feet. The gauge is 212,000 feet a day and the Pittsburgh Coal was placed at 675-80 feet.

In Pleasants County two tests were dry. In Union district John Adams and others drilled on the L. N. Barr farm through 740 feet with no pay and it was abandoned. In Jefferson district J. W. Ruckman drilled on the Mary F. Beeson through the Berea sand to 1,500 feet and it was dry.

In Ritchie County Gribble and Wilson completed a test on the J. W. Leonard heirs farm in Clay district in the Big Injun sand at 1,871 feet. It has a volume of 212,000 feet of gas. In Grant district, Bristol Oil & Gas Co. completed a second test on the Rachel Cain farm in the Big Injun sand at 2,318 feet. The Salt sand showed only 17,000 feet of gas and the Injun sand 33,600 feet.

In Roane County Hillcraft Gas Co. completed a second test on the L. P. Fields heirs farm in Harper district at 1,735 feet. Big Lime was at 1,540-1,688 feet; Big Injun at 1,688-1,721 feet with about 180,000 feet of gas a day at 1,713 feet after shot.

In Wayne County Mullens Gas Co. completed a test on the Dallas Sammons and others farm in Lincoln district at 2,563 feet. Big Lime was at 1,020-1,205 feet; Keener sand at 1,205-45 feet; Big Injun sand at 1,245-70 feet; Berea sand at 1,710-1,840 feet; Brown shale at 1,840-2,558 feet with about 220,000 feet of gas showing at 2,260-2,365 feet.

Deep Tests

In Kanawha County Godfrey L. Cabot, Inc., is drilling at 4,838 feet on the A. F. Vorholdt farm in Loudin district, and has shut down No. 2 on the Kanawha Land Co. at 991 feet on account of a bad hole. Columbian Carbon Co. is down 1,462 feet in the deep test on the S. H. Hoge farm.

In Malden district, Godfrey L. Cabot, Inc., is spudding on the N. B. Tompkins farm scheduled for the Oriskany sand. This operator has reached 1,100 feet in No. 9 on the Campbells Creek Coal Co. lease and 1,790 feet on the W. D. Lewis farm. Columbian Carbon Co. is drilling at 1,650 feet on the M. J. Dearing heirs farm.

In Elk district this company is down 3,236 feet in the second test on the G. and D. Copenhaver farm., and 1,992 feet on the W. L. Burdette farm. V. C. Smith and others are drilling deeper on the Matheny, Wertz and others lease on the island at the mouth of Coopers Creek and have struck a bone in the sand very difficult to drill. This test was formerly considered dry and is being drilled slightly deeper. Yoak Oil & Gas Co. is shooting the Oriskany sand on the W. T. and J. H. Goshorn farm with 90 quarts.

In Union district, Kanawha County, Godfrey L. Cabot, Inc., has reached 3,100 feet on the Alberta Putney farm. In Jefferson district Benedum and Trees are drilling at 6,270 feet in the deepest test on the Joseph Hill farm and in the Clinton sand.

Other Operations

In Boone County Owens Illinois Glass Co. has made a location for No. 3 on the J. G. Roberts farm in Washington district, and in Scott district has a rig standing for No. 3 on the H. C. Ballard farm. In Washington district O. B. Cunnngham and others have started drilling on the M. and D. Dolan farm.

In Cabell County H. H. Baker Gas Co. has started drilling No. 4 on the Augusta Beckett farm in McComas district. In this district Pridemore Gas Co. and Walden Gas Co. are rigging up on their lease of the Beckett farm. In Guyandotte district, O. A. Sears has started drilling on the Lucy A. Woods farm.

In Calhoun County Homer B. Scott has made a location on the L. M. Pitts farm in Sherman district. Hope Construction & Refining Co. has made a location on the Osie Jarvis farm. F. F. McIntosh is building a rig on the Charles Poling farm, and in Washington district is building a rig for No. 5 on the C. L. and G. W. Jarvis farm.

In Gilmer County Chiefton Oil & Gas Co. has started drilling on the D. M. Steinbeck farm in Troy district. In DeKalb district C. & H. Oil Co., Inc., has a rig for No. 2 on the Harold Wilt farm. E. D. Norman and others have a location on the Everett Collins farm. Coleman and Hamilton are rigging up the second test on the A. Gainer farm. Howard Robinson has part material on the C. F. Stalnaker farm.

In Pleasants County Mitchell Brothers have a location on the William E. Byers farm in Grant district. In McKim district, Ward and others have a location for No. 21 on the George Varner farm.

In Ritchie County McDougal Oil Co. is drilling a second test on the E. C. McDougal farm in Clay district. In Murphy district W. H. Bickel is drilling two wells on the Harry Miller farm, Nos. 2 and 3. Deem and Burke have a rig for a second test on the W. W. Lawrence farm in Murphy district.

In Roane County Harry Anderson is spudding on the J. N. C. Roberts farm in Curtis district. F. F. McIntosh has started drilling No. 3 on the McIntosh and Norman farm.

In Wetzel County O. T. Midcap and others have completed a rig on the Henry Elson farm in Green district.

Canadian Gasoline Sales

CHATHAM, Ontario, Nov. 16.—Six of the nine Canadian provinces reported gasoline sales for August, all but Manitoba and Alberta showing increases over the same month last year. Nova Scotia, New Brunswick and Saskatchewan did not report. Figures for the eight months of 1935 show increases over the same 1934 period in Prince Edward Island, Quebec, Ontario, Manitoba, Alberta and British Columbia; with no reports from the remaining three provinces. Indications are that 1935 gasoline sales will be considerably in excess of those last year.

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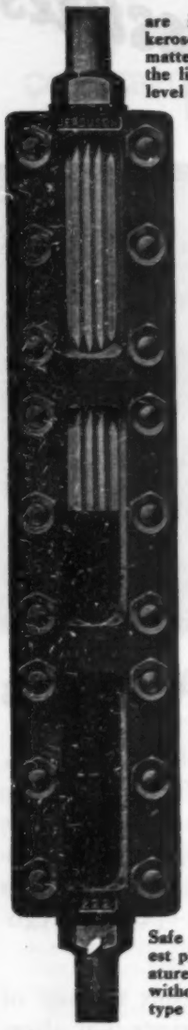

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Completions in North Texas

FORT WORTH, Tex., Nov. 18.—Among completions in the Wichita Falls, North Texas district, and in the Panhandle were the following:

PANHANDLE COMPLETIONS

Gray County

Gulf Production Co.'s No. 11 Thompson, top pay 3,183 feet, total depth 3,280 feet, shot; initial production 278 bbls., pumping: Jones' No. 3 Culler, top pay 3,150 feet, total depth 3,320 feet, shot; initial production 960 bbls., pumping. Kewanee Oil & Gas Co.'s No. 17 Smith Rest, top pay 3,130 feet, total depth 3,250 feet, shot; initial production 521 bbls., pumping.

Hutchinson County

Phillips Petroleum Co.'s No. 1 Fromma, top pay 2,375 feet, total depth 2,735 feet, initial production 22,950,000 feet of gas; No. 2 Gardner, total depth 3,110 feet; plugged back to 3,029 feet; acidized; initial production 40 bbls., pumping; No. 2 Moore-Timms, top pay 2,994 feet, total depth 3,045 feet, shot; initial production 231 bbls., pumping. Stanolind Oil & Gas Co.'s No. 5-A Pitcher, top pay 3,061 feet, total depth 3,105 feet, acidized; initial production 232 bbls., pumping; No. 5 Watkins, top pay 2,940 feet, total depth 2,990 feet, shot, initial production 307 bbls., pumping. Texas Plains Oil Co.'s No. 3 Watkins, top pay 2,950 feet, total depth 3,004 feet, shot, initial production 288 bbls., pumping.

Moore County

Magnolia Petroleum Co.'s No. 1 Brittain, top pay 2,770 feet, total depth 3,300 feet, initial production 26,400,000 feet of gas.

Wheeler County

Dumar Oil & Gas Co.'s No. 2 Linkey, dry and abandoned 1,437 feet. Helena Oil & Gas Co.'s No. 19 Keller, top pay 2,385 feet, total depth 2,521 feet, initial production 2,276 bbls. Murchison and Fain's No. 4 Binkley, top pay 2,427 feet, total depth 2,435 feet, initial production 505 bbls. Texas Co.'s No. 6 Bush, top pay 2,415 feet, total depth 2,538 feet, initial production 853 bbls.; No. 14 Keller, top pay 2,400 feet, total depth 2,529 feet, initial production 2,833 bbls.

WICHITA FALLS (North Texas) COMPLETIONS

Cooke County

Hudspeth-Harvey and Bass' No. 4 Trubenback, top pay 857 feet, total depth 894 feet, initial production 150 bbls. per day. Hudspeth and Bass and others' No. 1-B Trubenback, top pay 987 feet, total depth 1,018 feet, plugged back to 1,000 feet, initial production 10 bbls. per day. Keil and Keil's No. 1 Joe Tischler, total depth 1,257 feet, dry and abandoned. O. M. Pierce and others' No. 2 F. J. Trubenback, top pay 865 feet, total depth 905 feet, initial production 150 bbls. per day.

Archer County

L. T. Burns' No. 5-A York estate, top pay 1,407½ feet, total depth 1,408 feet, initial production 75 bbls. per day. Deep Oil Development Co. and Lindsey's No. 6, Lease No. 4, L. F. Wilson, top pay 2,191 feet, total depth 2,213 feet, initial production 1,500 bbls. per day, flowing. W. B. Hamilton's No. 11 A. J. Ikard, top pay 1,138½ feet, total depth 1,147½ feet, initial production 75 bbls. per day. S. H. Huggins' No. 1 J. J. Perkins and others, total depth 1,850 feet, dry and abandoned. Hattie B. Madden's No. 1 J. A. Young, total depth 1,465 feet, dry and abandoned. E. S. McLaughlin and others' No. 1-A Mrs. B. Garrett, total depth 747 feet, dry and abandoned. Perkins and Cullum's No. 203 Falls, top pay 1,120 feet, total depth 1,133 feet, initial production 100 bbls. per day; No. 204 Falls, total depth 1,269 feet, dry and abandoned. Petroleum Producers' No. 6-D J. T. Richardson, top pay 1,239 feet, total depth 1,259 feet, initial production 100 bbls. per day.

Baylor County

Consolidated Oil Co.'s No. 12-R Portwood, top pay 1,319 feet, total depth 1,365 feet, initial production 720 bbls. per day. Fain-McGaha's No. 1 W. B. Mills, total depth 1,451 feet, dry and abandoned. Ray and Staniforth's No. 28-C Portwood, top pay 1,332 feet, total depth 1,362 feet, initial production 1,300 bbls. per day flowing and swabbing.

Wichita County

Magnolia Petroleum Co.'s No. 33 R. S. Allen (old well deepened—old total depth 1,302 feet), top pay 1,428 feet, total depth 1,443 feet, initial production 30 bbls. per day. Poor Boy Oil Co.'s No. 1 F. P. Warren, top pay 566 feet, total depth 569 feet, initial production 7 bbls. per day. Rathke Oil Co.'s No. 6 Burnett, total depth 1,658 feet, dry and abandoned. Texas Co.'s No. 417 Waggoner estate, total depth 1,132 feet, dry and abandoned.

Jack County

B. B. Bryson and others' No. 1 Richardson-Lanier, total depth 2,037 feet, dry and abandoned. Buttram Petroleum Co.'s No. 14 Jones estate, top pay 2,079 feet, total depth 2,092 feet, initial production 30 bbls. per day.

Throckmorton County

R. L. Champion and others' No. 1 Frank Carter, total depth 332 feet, dry and abandoned. L. G. Hawkins and others' No. 1 R. E. Erwin, total depth 1,500 feet, dry and abandoned.

Wilbarger County

Lido Oil Co.'s No. 1-A Waggoner estate, total depth 400 feet, dry and abandoned; No. 2-A Waggoner estate, total depth 270 feet, dry and abandoned.

Young County

L. T. Burns' No. 1 G. H. Roach, total depth 1,340 feet, dry and abandoned. Fresno Oil Co.'s No. 10 J. M. Kirkland, total depth 720 feet, dry and abandoned. Harry Hines and others' No. 1 Stella Powell, total depth 1,404 feet, dry and abandoned. Charles E. Knox's No. 2-B E. Taylor, top pay 2,708 feet, total depth 2,733 feet, initial production 175 bbls. per day. Ben F. Looney and others' No. 1 C. C. Robinson, total depth 450 feet, dry and abandoned. Carrie E. Peterman's No. 5 J. R. Dyer, total depth 600 feet, dry and abandoned. D. L. Wolf and others' No. 1 Mary E. McBrayer, total depth 683 feet, dry and abandoned.

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Kansas Developments

By JAMES McINTYRE

DEEP WELL IN OXFORD FLOWS 5,039 BARRELS IN FIVE HOURS

Aside from the fact that a Dolomite completion in the Oxford pool in Sumner County flowed 5,039 bbls. of oil in five hours, and was given a 22,115-bbl. potential rating, there was not much of unusual interest in the past week's developments in Kansas.

A new test is to be made in northwestern Kansas by Helmerich & Payne, who have cellar dug for a wildcat in section 11-3-25w. Out in Logan County in the far west, Alma Petroleum Co. and others' No. 1 Watchorn in section 13-15-33w, after plugging back from 5,756 feet to 3,800 feet was drilling in a hole full of water at 3,812 feet.

Earl Wakefield's wildcat test in section 32-33-3, Cowley County, opened a Bartlesville sand pool but the well was not yet completed.

Production in the state was increased from a daily average of 135,675 bbls. to 144,600 bbls. Oxford is still held down rigidly to between 5,000 and 6,000 bbls.

Kansas

The estimated daily average production of Kansas for the week ending November 16 and for the preceding week follows:

	Barrels	
	Nov. 16	Nov. 9
Oxford City	5,550	5,100
Burrton	18,250	15,425
Ritz-Canton	6,425	6,650
Hollow	3,325	2,650
Voshell	4,725	3,300
Nikkel	2,575	2,500
Ellsworth County:		
Lorraine	9,100	8,675
Other pools	1,870	1,625
Rice County:		
Chase	10,775	11,425
Raymond	3,025	1,825
Steckel	4,125	2,625
Keesling	1,750	1,580
Other pools	3,705	3,585
Russell County:		
Fairport	2,720	2,160
Gorham	3,090	2,850
Russell	2,715	1,850
Other pools	2,500	1,715
Sedgwick County	6,850	6,710
Barton County	1,840	1,948
Ellis County	460	400
Kingman County	780	725
Stafford County	1,990	1,990
Greenwood County	10,750	10,875
Butler County	17,800	18,000
Other fields	17,905	18,487
Total Kansas	144,600	135,675

Sumner County

One well was completed in the Oxford pool in Sumner County. Lario Oil & Gas Co. and Barnsdall Oil Co.'s No. 10-A Wenrich got Simpson Dolomite at 2,831-35 feet. On its potential test it flowed 1,071 bbls. the first hour then in subsequent hours 987 bbls., 960 bbls., 1,008 bbls., and 1,013 bbls., or 5,039 bbls. in five hours. It was given a potential production rating of 22,115 bbls. per day. It is one of the largest Dolomite wells in the pool.

In the Wellington pool, Winkler & Koch and others' No. 1 Belsley, SW SW NW section 2-32-2w, was abandoned as a dry hole. It found barren Siliceous lime at 4,350-4,408 feet.

Slick and others' No. 4 Peasel, SE NE NW Section 33-31-1w, flowed 197 bbls. of oil in 15 hours from Chat at 3,636-38 feet. It was then acidized.

Stafford County

Stanolind Oil & Gas Co. made location for No. 7 Allen, SE SW SW section 31-22-11w, Stafford County. Herndon Drilling Co. and Atlantic Oil Producing Co. have cellar dug for No. 1 Russell, C SE NW section 20-21-14w.

Harvey County

Imo Oil & Gas Co.'s No. 1 Ewy, SW NW NW Section 24-22-2w, Harvey County, is a 6,500,000-foot gas well in Chat at 2,925-70 feet and was completed.

Ellsworth County

C. B. Davis and Winkler & Koch's No. 6 Melchert, SW NE NE section 23-17-9w, Ellsworth County, made a potential production of 1,342 bbls., producing from Siliceous lime at 3,179-93 feet, and was completed.

Tom Palmer's No. 1 Splitter, NW NE SE section 17-17-8w, was a hole full of water from Siliceous lime at 3,408-15 feet and was abandoned.

Bradley, Scanlon and others have ponds dug for No. 8 Mohney (formerly J. Rolfs), SE SE SE section 14-17-9w.

Carter Oil Co. and others' No. 1 B. Grath, NE NE SW section 23-17-9w, had 1,800 feet of oil in the hole from Siliceous lime. Texas Co. acidized No. 6 Dees, SW NE NW section 23-17-9w, in Siliceous lime and it pumped 100 bbls. of oil in 24 hours. It was then shot with 10 quarts of explosive at 3,171-76 feet and the crew was cleaning out.

Rice County

Phillips Petroleum Co. and Indian Territory Illuminating Oil Co. completed No. 4 Krampe, SE cor. NE SE section 31-19-10w, Rice County. It produced 1,710 bbls. of oil in 24 hours from 3,281-84 feet.

Stanolind Oil & Gas Co.'s No. 2 Mitchell, NW cor. SW NW SW section 32-19-10w, produced 1,612 bbls. of oil in 24 hours from pay at 3,284-85 feet and was completed.

C. E. Skiles and others have cellar dug for No. 1 Edwards, NW NW NE section 3-18-8w; L. E. Douglas and others, location for No. 1 Stolz, SE SE SE section 17-19-10w; Franco Central Oil Co. and others, location for a wildcat test, No. 1 Shanyo, SW SW NE section 11-18-10w.

Gypsy Oil Co.'s No. 3 Coffman, NW SW SW section 5-20-9w, was completed at 3,233-36 feet. It was acidized and pumped 66 bbls. of oil per day in a two-day test.

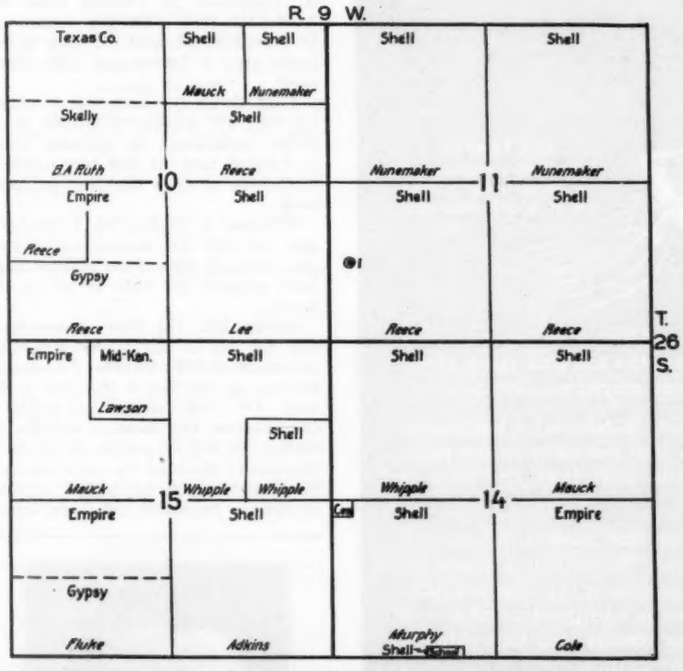
The three wells all produce from Siliceous lime.

Empire Oil & Refining Co.'s No. 1 Gouldner, SW SE SW section 9-18-9w, set 5-inch pipe at 3,239 feet on top of Siliceous lime. The hole was about half full of oil but had not been tested.

Phillips Petroleum Co. and Indian Territory Illuminating Oil Co.'s No. 5 Krampe, SW SE SE section 31-19-10w, pumped 157 bbls. in 15 hours at a total depth of 3,320 feet.

Stanolind Oil & Gas Co.'s No. 1 Specht, NW NW NE section 6-20-10w, was shot with 20 quarts at 3,310-20 feet and swabbed 10 bbls. per hour. It was then shot with 38 quarts, but not tested. Same company's No. 2 Specht, NE NW NE section 6-20-10w, plugged back to 3,342 feet, was shot with 20 quarts and swabbed 26 bbls. of oil per hour. It was then acidized with 3,000 gallons, but not yet tested.

Gypsy Oil Co.'s No. 1 Dick, NW NW SW section 15-20-9w, swabbed 531 bbls. in 24 hours. It had been shot with 40 quarts about a week previously, total depth 3,252 feet.



Shell Petroleum Corp. has completed the above Viola lime discovery well in Reno County. It made a potential production of 898 bbls.

(Copyrighted by Mid-Continent Map Co., Wichita)

Reno County

Shell Petroleum Corp.'s No. 1 Reese, C W half W half SW section 11-26-9w, in Reno County, which opened a pool in the southwestern part of the county, was completed in the past week. This well, which produces 43 gravity crude, had produced 878 bbls. in 24 hours on its potential test, the oil coming from Viola at 4,128-56 feet. It was not acidized.

Derby Oil Co. was building rig for No. 1 Schrock, SE SE SW section 27-24-5w. Marathon Oil Co. was building rig for No. 1 Bontrager, NE NE NE section 33-24-5w.

Shell Petroleum Corp.'s No. 2 Hoskinson-A, C NE SE section 9-24-4w, flowed 363 bbls. of oil and 60 bbls. of water in 24 hours from Chat at a total depth of 3,371 feet.

Barton County

In the Barton County side of the Steckel pool, Magnolia Petroleum Co. completed No. 1 Steckel, SE SW NE section 1-20-11w. It was good for 620 bbls. of oil in 24 hours after an acid treatment in Siliceous lime at 3,279-87 feet.

C. B. Davis and Gypsy Oil Co. were building rotary rig for No. 2 Steckel, NE NW SE section 1-20-11w; Gypsy Oil Co., building rotary rig for No. 3 Steckel, SW SE NE section 1-20-11w; Magnolia Petroleum Co., rigging up rotary for No. 2 Steckel, NE SW NE section 1-20-11w.

Butler County

Al Becker completed a 38-bbl. producer in No. 2 Beedles, SE NE NE section 8-27-6. Mississippi lime was topped at 2,745 feet, total depth 2,767 feet.

Western Kansas Oil & Refining Co.'s wildcat, No. 1 King & Marshall, NW NW SW section 11-28-6, which came in over a month ago, was completed. It made a potential produc-

tion of oil and 5 bbls. of water from Simpson sand at 3,038-49 feet.

Magnolia Petroleum Co. was drilling at 2,390 feet in No. 1 Foster, C N half NW SE section 21-27-4, an old well deepening from 2,387 feet; Western Kansas Oil & Refining Co., rigging up No. 1-A Lucas, NE NE SE section 10-28-6; Vickers Petroleum Co. & Sanford, location for No. 3 Joseph, 880 feet south and 440 feet east of NW cor. section 2-25-3, and a machine in for No. 2 McCraner D, 660 feet from north and 440 feet from west lines of NE quarter section 2-25-3.

Penwest Oil Co.'s No. 2 Steinhoff, 450 feet north and 140 feet east of SW cor. section 22-29-6, was acidized in Kansas City lime at 2,170-2,214 feet and it pumped 75 bbls. in 24 hours.

McPherson County

Continental Oil Co. had rotary rig up for No. 1 Jones, SE SE SE section 31-21-1w, McPherson County.

W. C. McBride, Inc.'s No. 3 Whitright, C NW SE section 30-19-1w, was estimated to be good for 20 bbls. per hour at 2,960-63 feet but had not been given a test.

Logan County

Alma Petroleum Co. & McNeely's No. 1 Watchorn, C SW NE section 13-15-33w, was drilling at 2,812 feet with 2,500 feet of water in the hole. This test had been drilled to 5,756 feet and plugged back to 3,800 feet, where 5-inch casing was set.

Norton County

Heimerich & Payne and others have cellar dug for No. 1 Collins, C NE section 11-3-25w, Norton County, on a seismographed structure.

Sedgwick County

Dickey Oil Co. completed No. 1 Chase, SE cor. section 11-27-2, Sedgwick County. It was a failure and was abandoned at a total depth of 3,729 feet. Viola was topped at 3,161 feet, Simpson Dolomite at 3,174 feet. It had some oil production from the Simpson series but after acidization it produced so much salt water that it was plugged back to 3,263 feet, where it tested only water. It was a wildcat.

Greenwood and Woodson

Aikman & Braden's No. 1- Hatch, 800 feet south and 550 feet east of C section 35-21-13, Woodson County, was completed as a gasser, good for 300,000 feet per day, at a total depth of 1,455 feet. It did not show commercial production in Burgess sand at 1,817-53 feet and was plugged back.

Lucille Oil Co. made a location for No. 1 Christy, SE NW SW section 12-26-9, Greenwood County; Barbara Oil Co., a location for No. 16 Pixley, NW cor. SW NW SW section 8-22-10, Greenwood County; Harper Oil Co., drilling at 1,200 feet in No. 6 Figge, NE NE SW section 28-23-14, Woodson County.

Russell County

T. C. Johnson and others' No. 1 Mermis, NE NE SW section 29-13-15w, a wildcat, found only water in Siliceous lime at 3,357-75 feet, total depth, and was abandoned.

Hartman & Blair's No. 2 Rouback A, completed in Oswald lime at 3,056-3,119 feet, with pay beginning at 3,080 feet, pumped 782 bbls. in 24 hours after a 3,000-gallon acid treatment.

Wolf Creek Oil Co.'s No. 1 Mills, SE NE NW section 10-14-15w, is a 60-bbl. completion in Gorham sand at 3,288-92 feet. It had been drilled to Granite at 3,314 feet, and plugged back.

Hartman & Blair's No. 1 Boxberger, NE NE NE section 26-14-14w, was acidized with 3,000 gallons and later pumped 227 bbls. of oil in 18 hours.

Smoky Hill Oil Corp. has cellar dug for No. 1 Miller, SE SE SW section 30-14-13w; Phillips Petroleum Co., rig up for No. 3 Holland, C E half SW SW section 13-14-15w; Coralena Oil Co., location for No. 1 Disken, SE SE SE section 30-15-13w; Bridgeport Machine Co., location for No. 1 Michaelis B, NE SE SE section 33-15-13w; Barnsdall Oil Corp., location for No. 1 Karst, NE SE NW section 27-15-14w; Skelly Oil Co., location for No. 1 Karst, SE NE NW section 27-15-14w; Hartman & Blair, moving in material for No. 2 Sellens, NE NE NW section 26-15-13w.

Gypsy Oil Co.'s No. 1 Galliert, NE NE SW section 34-15-12w, had 400 feet of oil in the hole from Siliceous lime at 3,298-3,306 feet but had not been tested.

Cowley County

E. K. Carey's No. 1 Hanlen, SE NE NW section 35-20-4, Cowley County, was dry and abandoned at 3,004 feet, top of the Mississippi lime 2,975 feet.

Aylward, Trees Oil Co. and others have rig up for No. 1 Shields, SW SW SW section 17-32-6; Carey and others, moving in material for No. 1-A McCullough, SW SW NW section 13-33-4.

Earl Wakefield's wildcat, No. 1 Hanna, NE NE SW Section 2-31-4, Cowley County, swabbed 4 bbls. per hour from Bartlesville sand at pay at 2,975-89 feet.

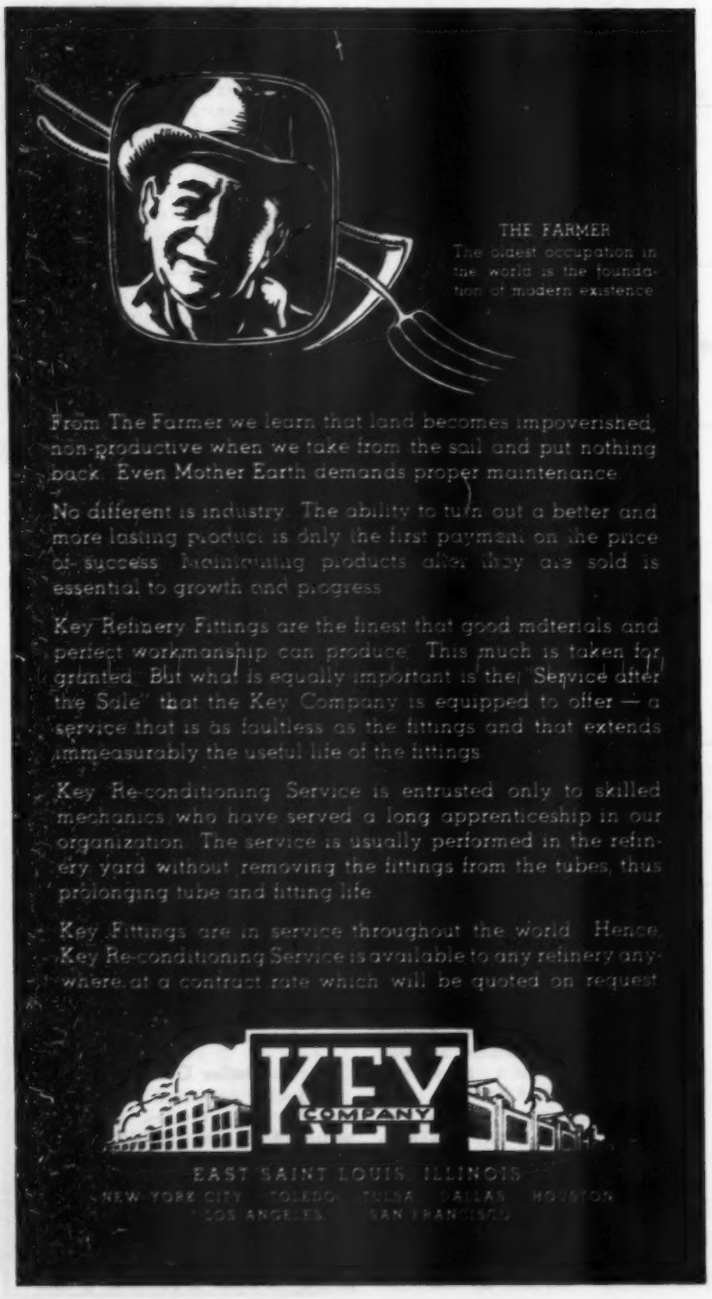
Gralapp & Bess' No. 2 Bishop, SW SE SE section 13-32-4, flowed 220 bbls. of oil in 24 hours after a 40-quart shot at 2,330-42 feet.

Petroleum Imports

CHATHAM, Ontario, Nov. 16.—Imports of petroleum, asphalt and their products into Canada in September reached a value of $4,766,804 compared with $4,518,707 in August. The main sources of the September imports, with percentages, were: United States, 76.8; Peru, 8.8; Colombia, 8.3; Dutch West Indies, 2.6; Venezuela, 2.3.

Receipts of crude petroleum in September totaled 127,017,748 gallons made up of 97,998,459 gallons from the United States; 14,813,757 gallons from Colombia; 7,535,976 gallons from Venezuela, and 6,669,556 gallons from Peru. The August imports totaled 126,729,590 gallons, of which 90,963,762 gallons came from the United States.

Exports of petroleum and its products from Canada in September were valued at $125,125, an advance of 125.2 per cent over the August valuation of $35,629.


THE FARMER
The oldest occupation in the world is the foundation of modern existence
From The Farmer we learn that land becomes impoverished, non-productive when we take from the soil and put nothing back. Even Mother Earth demands proper maintenance
No different is industry. The ability to turn out a better and more lasting product is only the first payment on the price of success. Maintaining products after they are sold is essential to growth and progress
Key Refinery Fittings are the finest that good materials and perfect workmanship can produce. This much is taken for granted. But what is equally important is the Service after the Sale that the Key Company is equipped to offer — a service that is as faultless as the fittings and that extends immeasurably the useful life of the fittings
Key Re-conditioning Service is entrusted only to skilled mechanics who have served a long apprenticeship in our organization. The service is usually performed in the refinery yard without removing the fittings from the tubes, thus prolonging tube and fitting life
Key Fittings are in service throughout the world. Hence Key Re-conditioning Service is available to any refinery anywhere at a contract rate which will be quoted on request
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NEW YORK CITY TOLEDO TULSA DALLAS HOUSTON
LOS ANGELES SAN FRANCISCO

EVAN L. DAVIS

Evan L. Davis, who organized the first bond department of a Tulsa bank, left his duties as head of that department of the First National Bank & Trust Co. of Tulsa Monday to become head of the bond department of the Tulsa office of Francis, Bro. & Co. He will be succeeded in his position at the bank by Otis H. Orman, assistant cashier. Mr. Davis has been in the bond business since 1919. Since January 1, 1930, he has been in charge of all the securities business of the First National Bank & Trust Co., including the purchase of securities for the bank, its bank correspondents and individual customers. Mr. Orman, who takes over Mr. Davis' duties at the bank, has been with the institution since 1921.

OTIS H. ORMAN

WILDCAT OPERATIONS

OKLAHOMA WILDCATS

Week Ending November 16

NORTHERN OKLAHOMA

Alfalfa County

Tex-O-Kan Oil Co.'s No. 1 Acre, C SW NE Sec. 14-24-11w.
Drlg. 6,690 ft.

Beaver County

Anderson & Kerr et al's No. 1 Davis, C SW SE Sec. 36-5-26 (Cimarron Meridian).
Drlg. 3,965 ft.

Beckham County

G. E. Martin's No. 1 Hood, C NE NW Sec. 7-8-23w.
Drlg. 2,202 ft.

Stu Oil Co.'s No. 1 Blair, C NW SE Sec. 32-9-26w.
Spudded.

Caddo County

Denver Prod. & Ref. Co.'s No. 1 Sah-Can, C SE SE Sec. 33-10-10w.
Drlg. 8,550 ft.

H. W. Lee et al's No. 1 Horton, NE cor. Sec. 9-6-13w
Drlg. 1,800 ft.

F. A. Turner et al's No. 1 Sapin, NE NE SW Sec. 1-5-11w.
T.D. 3,166 ft.; U.R. 5 3/16-in. csg. to 3,138 ft.

Cleveland County

Asa Lee Mayes, Inc.'s No. 1 Parsons, SW SW SE Sec. 36-9-1.
Spudded to 500 ft.

Hall-Briscoe, Inc.'s No. 1 Fant, SW SW NE Sec. 27-10-2w.
Viola 7,140 ft.; drlg. 7,260 ft.

Coal County

Carter Oil Co. et al's No. 1 Thompson, C S½ NE NW Sec. 34-2-9.
Drlg. 6,138 ft.

Southern Oil Co.'s No. 1 Fish, SW SW SW Sec 6-1s-8.
Hunton 208 ft.; T.D. 352 ft.; plugging back.

Comanche County

Oscar Jones' No. 1-A Scheets, NE SW Sec. 26-3-10w.
Rigged up.

F. B. Imboden et al's No. 1 Smith, SW cor. 12-2-10w.
Show of oil at 230-38 ft.

John Nicholas' No. 1 Householder, NE NE SW Sec. 8-2-10w.
S.D. 790 ft.

Geo. Pace et al's No. 1 Spencer, SW cor. SE Sec. 21-3-10w.
Drlg. 1,971 ft.

Ellis County

Anderson & Kerr's No. 1 Teeter, C SE SE sec. 2-17-25w.
Drlg. 2,000 ft.

Garfield County

Ross Cummings et al's No. 1 Gage Est., SE NW Sec. 27-22-3w.
R.U. cable tools.

Herndon Drlg. Co. et al's No. 1 Whitaker, SE cor. Sec. 27-24-3w.
Drlg. 4,335 ft.

Earl McBride's No. 1 Gage, SE SE NW Sec. 27-22-3w.
Drlg. 1,010 ft.

Garvin County

Charles Carter and W. S. Key, Inc.'s No. 1 Wood, NW SW SE Sec. 5-4-3e.
S.D. 2,495 ft.

Suggett & McElreath's No. 1 Camp, NE NE SE Sec. 22-4-1w.
T.D. 2,773 ft.; making repairs.

Grady County

Sayre Oil Co.'s No. 1 Anderson, NE SE SE Sec. 36-4-6w.
Drlg. 2,700 ft.

Grant County

Heimerich & Payne's No. 1 Crouse, C NE SW Sec. 29-25-3w.
Top Wilcox 6,615 ft.; T.D. 6,684 ft.; shot off pipe at 4,443 ft.; pulled 4,443 ft. of 8-in. csg.; made Schlumberger test; no results.

Shell Pet. Corp.'s No. 1 Foster, NW SE Sec. 30-27-8w.
T.D. 5,962 ft.; rigging up standard tools.

Wentz Oil Corp. et al's No. 1 Wirtz (Community), SE SE NW Sec. 22-28-4w.
Drlg. 4,867 ft.

Southern Oil Co. et al's No. 1 Allen, SW SE Sec. 36-26-4w.
Drlg. 2,450 ft.

Greer County

H. N. Payne et al's No. 1 Tressell, NW cor. Sec. 1-7-32w.
T.D. 1,785 ft.; U.R. 8-in. csg.; to deepen; cleaning out.

Hughes County

Caprock Oil Co.'s No. 1 Parks, SW SW SE Sec. 34-7-8.
S.D. 300 ft.

Sivalls et al's No. 1 Montgomery, NW SW NW Sec. 7-9-9.
T.D. 2,040 ft.; S.D.

Texas Co.'s No. 1 Keaton, NW SW Sec. 4-8-10.
Set 5-in. csg. 3,950 ft.; shot 15 qts. 3,-985-4,038 ft.; acidized; 650 ft. oil and 1,-250 ft. water in hole; pulled 5-in. csg. and plugging back to 3,845 ft.; acidized with oil load, flowed 50 bbls. oil gross in one head, then "went dead."

Kay County

Heimerich & Payne's No. 1 Roth, SW SW SW Sec. 8-28-2w.
Set surface pipe.

A. D. Morton's No. 1 Warren, SE SE NW Sec. 19-29-4.
Hole full water 1,800 ft.

Robinson Drlg. Co.'s No. 1 Hermes, SW SW NW Sec. 6-26-4.
Wilcox sand at 3,930-37 ft.; dry and abandoned 3,937 ft.

Kiowa County

Rajah Oil Co.'s No. 3 Stone, C SE NE Sec. 34-7-17w.
Salt water 1,480-1,547 ft., T.D.; plugged back to 1,050 ft.

Leflore County

McCraw et al's No. 1 Tidwell, C NW SE Sec. 17-3-22.
Set 15-in. pipe 277 ft.

Lincoln County

W. N. Anthony's No. 1 Fruin-Eckman, SE SE SW Sec. 4-16-1e.
Rigging up standard tools; T.D. 5,181 ft.; bailed at 300 ft.; small show of oil and water; shut down.

M. W. Cozart's No. 1 Sekovaty, NE NE NW Sec. 14-14-3.
Cellar and pits.

J. Garfield Buell et al's No. 1 Seward, NE NW NE Sec. 25-14-3.
Skinner and Bartlesville missing; Hunton 4,877 ft.; drlg. 4,887 ft.

Fred McDuff's No. 1 Jacob, NE NE SE Sec. 10-15-3.
Cellar and pits.

Texas Co.'s No. 1 Vanderpool, NW SW SE Sec. 11-16-3.
Drlg. 500 ft.

Logan County

Springrose Drlg. Co.'s No. 1 Cole (Harrison) SW SW NW Sec. 32-15-1.
Rigging up rotary.

Stanolind O. & G. Co., Amerada Pet. Corp. and Eason O. & R. Co.'s No. 1 Gragg, SW SW NE Sec. 20-18-4w.
Drlg. 5,357 ft.

Texas Co. et al's No. 1 Wood, SW SW NE Sec. 34-15-4w.
Viola 6,855 ft.; Dense 6,885 ft.; will core to 6,915 ft.

McIntosh County

Indian Ty. Ill. Oil Co.'s No. 1 Tancred, 1,050 ft. S and 390 ft. E of C. Sec. 9-9-14.
Rigging up cable tools.

Okfuskee County

W. J. Sherry et al's No. 1 Washington, SW SW NE Sec. 21-13-7.
Oswego 2,790 ft.; drlg. 2,955 ft.

Stanolind and Amerada's No. 1-A Washington, SE NE NE Sec. 12-13-7.
Location.

Sunray Oil Co.'s No. 1 Culla, NE SW NE Sec. 13-12-8.
Wilcox sands 4,165-80 ft., dry; 4,190-94 ft., T.D.; water, will plug back to 4,001 ft. and acidize.

Oklahoma County

Sinclair Prairie O. & G. Co.'s No. 1 Corbett, NE NW NE Sec. 17-13-3w.
Wilcox sand 6,645-6,706 ft.; plugged back to 6,524 ft.; cleaned itself into pits; flowed 47½ bbls. of "gasoline" in 11 hrs. with gas at rate of 15,000,000 ft. per day.

Osage County

J. A. Freeberg et al's No. 1, NE cor. SE Sec. 1-25-6.
Drlg. 3,075 ft.

Texas Co.'s No. 1, SW cor. SE Sec. 22-24-6.
Mississippi lime 2,834 ft.; T.D. 2,942 ft., acidized, with an 80 bbl. oil load; pumped 8½ bbls. oil in 90 min.; S.D.

Pittsburg County

Vaughn Production Co. et al's No. 1 Chunn, 990 ft. N and 614 ft. W of C Sec. 29-4-14.
S.D. 1,170 ft.; (correction).

Pontotoc County

Ada Petroleum Co.'s No. 1 Simmons, CWL NW NW Sec. 3-3-6.
Bromide 4,545 ft., sands 4,660 ft., and 4,747 ft.; dry and abd. 4,887 ft.

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-3-6.
S.D. 2,920 ft.

Continental Oil Co.'s No. 1 McCarty, C SE NW Sec. 12-1-7e.
McLish 4,427 ft.; T.D. 4,621 ft.; flowed 1,080 bbls. in 12 hrs. and 35 min.; will deepen.

Delaney et al's No. 1 Fox, 1,337 ft. from N and 1,091 ft. from E lines of SE Sec. 2-1-7.
Cellar and Pits.

Franks Bros.' No. 1 Abbott, SW NW NE Sec. 34-3-6.
Rig.

Gypsy Oil Co.'s No. 1 Emry, SW SW NE Sec. 15-2-6.
Drlg. 3,508 ft.

McBride, Inc., et al's No. 1 Chester, SE SE NE Sec. 26-4-4.
Will run 10-in. pipe to 850 ft., T.D.

McBride, Inc., et al's No. 1 Copeland, SE NW Sec. 31-4-5.
Viola 1,636 ft.; T.D. 1,950 ft.; sulphur water; underreaming 6-in. csg.

Orbit Oil Co.'s No. 1 Federal Land Bank, SE SW SW Sec. 10-4-3.
Drlg. 2,050 ft.

Orbit Oil Co.'s No. 1-A Federal Land Bank, SE SW SW sec. 10-4-3.
Drlg. 2,050 ft.

Schumacher et al's No. 1 Schumacher, NE NW NE sec. 23-5-10.
Rigging up machine.

Southern Oil Co.'s No. 1 Perry, SW SW NW Sec 11-4-6.
Sylvan 2,735 ft.

Pottawatomie County

Ross Oil Co. et al's No. 1 Sparkman, SE NE Sec 33-8n-4e.
Drlg. 3,840 ft.

Seminole County

L. Cooper's No. 1 Chandler, NE SE SW Sec. 4-5-6.
S.D. 1,780 ft.

Deep Rock Oil Co.'s No. 1 Robert, SW NW NW Sec. 32-9-8.
Wilcox 4,569 ft.; cored water sand 4,-589-90 ft., T.D.; will run Halliburton tester.

Texas County

Cabot Carbon Co.'s No. 1 Mathews, C NW Sec. 8-3-15 (Cimarron Meridian).
3,500,000 ft. gas 2,675-80 ft.; T.D. 2,680 ft.; fishing for tools.

Washita County

L. P. McWhirter's No. 1 fee, SW cor. Sec. 34-8n-19w.
Drlg. 1,120 ft.

SOUTHERN OKLAHOMA

Atoka County

L. O. Garner et al's No. 1 Garner, C NE NW NE Sec. 27-1n-15 (800-ft. test).
S.D. 825 ft.

Malarnee et al's No. 2 D.O.K. land, C SE SE Sec. 35-2s-13.
T.D. (corrected) 3,136 ft.; cleaning out

Mid-Continent Pet. Corp. et al's No. 1 Fulton, SW cor. Sec. 19-1s-12e.
T.D. 3,005 ft. in Atoka; tools moved out.

R. H. Pierce et al's No. 1 Aetna Life Ins. Co., NW SW NE Sec. 10-1n-13e.
Drlg. 2,335 ft.

A. J. Sanders' No. 1 Redden, NE SW SW Sec. 19-1n-15e.
Drlg. 220 ft.

Vierson et al's No. 1 Williams, NE SW NW Sec. 34-2s-10.
T.D. 2,650 ft.; (correction); fishing.

Bryan County

H. B. Smith et al's No. 1 Henry, C NW NE Sec. 10-8s-7e.
T.D. 258 ft., cleaning out.

Carter County

Carter Oil Co.'s No. 1 Carter-Williams SW NE SW Sec. 27-2s-3w.
T.D. 5,088 ft., flowed 10,000 bbls. of oil in 24 hrs.; pipe stuck.

Louis Sikes' No. 1 Byrd, SW SE SW Sec. 4-2s-2w.
T.D. 1,727 ft.; blew in; 3,000,000 ft. of gas; killed; preparing to run liner.

Choctaw County

Rhodes et al's No. 1 Possumik Savings Bank, SW NW Sec. 1-5s-17.
Fishing tools at 605 ft.

Comanche County

George Pace et al's No. 1 Spencer, SW SW SE Sec. 21-3-10w.
Set 12½-in. pipe 70 ft.

Imbodin et al's No. 1 Woods, SE SW SE Sec. 27-3-10w.
Pits.

F. F. Stevens' No. 1 Green, SE SE SW Sec. 2-1n-13w.
Fishing for tools 1,893 ft.

Jackson County

Associated Oil Co.'s No. 1 Harrell, NE NE SE Sec. 13-1s-21w.
S.D. 1,360 ft.

Gypsy Oil Co.'s No. 1 Stokes, SE NW SW Sec. 11-1-20w.
Lime 1,709-11 ft.; T.D. 1,722 ft.; S.D.

Jefferson County

M. H. Barrett's No. 1 Moss, C N½ NW SW Sec. 9-6s-7w.
Drlg. 800 ft.

Gypsy Oil Co.'s No. 1 James, SW SE SE Sec. 30-6s-6w.
S.D. 2,102 ft.

Johnston County

Equitable O. & G. Co.'s No. 1 Bellsey, NE SW Sec. 12-2s-4e.
Drlg. 810 ft.

Godfrey & Neff's No. 1 Everets, NE cor. SE SW SW Sec. 20-4s-4.
Drlg. 150 ft.

Moore & Wirick's No. 1 Westheimer & Daube, SE NW NE Sec. 19-2s-4e.
Drlg. 440 ft.

Neff & Godfrey's No. 1 Merrell, 820 ft. N, 670 ft. W SE cor. Sec. 28-4s-6e.
Abd. 470 ft.

Love County

Amerada Pet. Corp.'s No. 1-A Westheimer & Daube, SW SE SW Sec. 27-6s-3e.
Woodford 1,750 ft.; drlg. 2,350 ft.

Sinclair Prairie Oil Co.'s No. 1 Stockton SE SE SW Sec. 26-6s-2w.
T.D. 6,590 ft.; core at 6,550-63 ft. showed oil; Schlumberger test at 6,587 ft. showed water.

Marshall County

M. H. Barrett's No. 1 Moss, C N½ NW SW Sec. 9-6s-7w.
T.D. 800 ft.

Jess Cook et al's No. 1 May, NE NW Sec. 12-5s-5.
Drlg. 75 ft.

Norman Smith's No. 1 Chestnut, NE cor. Sec. 23-5s-5e.
S.D. 275 ft.

Selby Oil & Gas Co.'s No. 2 Gilbert, SE cor. SW NE SW Sec. 25-5s-7e.
Drlg. 210 ft.

Pushmataha County

C. W. Whitehead et al's No. 1 Misser, SE SW SW Sec. 25-2s-15e.
Drlg. 3,480 ft.

Stephens County

Franklin & Duncan's No. 1 Woolsey, NW NW SE Sec. 10-3s-6w (old well deepening).
T.D. 1,050 ft.; pulled rig in.

Prince Bros.' No. 1-A Williams, C SW SE Sec. 19-2-8w.
Drlg. 1,724 ft.

Shasta Oil Co.'s No. 1 Fuqua, NE NW NW Sec. 13-1s-7w.
T.D. 1,125 ft.

Tillman County

J. B. Connelly's No. 1 McCord, NW SE NE Sec. 15-1-17w.
T.D. 665 ft.

Gypsy Oil Co.'s No. 1 Schenck, SE NW SE Sec. 31-1s-18w.
Drlg. 2,125 ft.

Loper et al's No. 1 Conrad, NE cor. Sec 35-1s-19w.
Drlg. in brown shale 1,660 ft.

C. A. Yoakum's No. 1 Hunter, SE cor. NE sec. 9-3s-13w.
Rigging up rotary.

KANSAS WILDCATS

Week Ending November 16

(Descriptions are East unless marked otherwise)

Barton County

Lario O. & G. Co. et al's No. 1 Smith, SW NW NW Sec. 26-18-13w.
Drlg. 830 ft.

Murphy & Morgan's No. 1 Robinson, NE NE SW Sec. 21-16-14w.
Rigging up.

Suppes & Witt's No. 1 Hayes, NW cor. Sec. 7-16-15w.
Drlg. 3,470 ft.

Terry & Feaster's No. 1 Feist, NE NE SE Sec. 29-18-11w.
Siliceous lime 3,430-32½ ft., T.D.; pumped 435 bbls. in 18 hrs., net.

W. E. Witt's No. 1 Murry, NW NW SW Sec. 14-17-14w.
Cleaning out 550 ft.

Cowley County

Carey et al's No. 1 Short, NE NE NW sec. 6-32-4.
Drlg. 300 ft.

T. C. Johnson's No. 1-A Ferguson, NW SW SE Sec. 17-30-3.
Bailed 5 bbls. oil in 15 hrs. at 2,162 ft.; U.R. 8-in. csg. to 2,167 ft.

Roth & Faurot's No. 1 Sherwood, NE NW SW sec. 11-31-4.
Rig.

Earl Wakefield's No. 1 Hanna, NE NE SW Sec. 2-31-4.

Bailed 5 bbls. oil per hr.; pay at 2,975-89 ft.
Winkler, Koch et al's No. 1-B Haslan, C NW NE Sec. 13-31-7
U.R. 10-in. csg. to 1,108 ft.

Dickinson County

Dutch Oil Co.'s No. 1 Phillips, C NE NW Sec. 16-15-1e.
Drlg. 2,430 ft.

Ellis County

Heimerich & Payne et al's No. 1 Kuhn, C NE quarter Sec. 16-14-20w.
Lamotte sand 3,397 ft.; fishing at 3,-900 ft.; rigging up rotary.
P G. Reynolds et al's No. 1 Walter, SE NE SW Sec. 2-12-18w.
Rig.
Twin Drlg. Co.'s No. 1 Goetz, SW SW SE Sec. 3-14-17w.
Drlg. 2,400 ft.

Ellsworth County

Empire Oil & Refining Co.'s No. 1 Dolchek, SW cor. sec. 7-16-7w.
Rigged up.
Gypsy Oil Co. and Texas Co.'s No. 1 Lapham, SW cor. Sec. 27-16-7w.
Dry and abd. 3,077 ft.
Tom Palmer's No. 1 Splitter, NW NE SE Sec. 17-17-8w.
Water at 3,408-15 ft.; abandoned.
Slick, Pryor & Lockhart's No. 1 Sturn, NW NW SW Sec. 26-17-10w.
Drlg. 2,295 ft.

Graham County

Cusco Oil Co.'s No. 1 Kaufman, C NE NE Sec. 16-6-24w.
Rigging up.
Vickers Pet. Co. & Phillips Pet. Co.'s No. 1 Hutton, 430 ft. W and 330 ft. S of NE SE Sec. 29-8-22w.
Cleaning out 825 ft.

Grant County

Piney Oil & Gas Co.'s No. 1 Kennedy, C SW¼ Sec. 10-29-36w.
Drlg. 2,482 ft.

Greenwood County

Mohawk Oil Co.'s No. 1-A Edgar, NE NE SW sec. 2-28-8.
Drlg. 550 ft.
Ward McGinnis' No. 1 Crawford, C NE SE sec. 3-28-12.
Shut down 1,104 ft.

Harvey County

Ok-Tex Oil Co.'s No. 1 Osborne, C SE SE sec. 6-22-3w.
Fishing 1,906 ft.

Haskell County

Heimerich & Payne's No. 1 Elliott, C SW Sec. 16-29-31w.
Rigging up.

Kingman County

D. R. Lauck's No. 1 Skilling, SE NE SW Sec. 33-27-8w.
Rigging up cable tools 4,022 ft.

Logan County

Alma Pet. Co. and McNeely's No. 1 Watchorn, C SW NE Sec. 13-15-32w.
T.D. 5,756 ft.; plugged back to 3,800 ft.; ran 5-in. csg.; drlg. 3,812 ft.; 2,500 ft. water in hole.

McPherson County

Whan et al's No. 1 Stromquist, SW SE SE Sec. 2-19-2w.
U.R. 5-in. csg. to 2,397 ft.

Morton County

Larie O. & G. Co. and Elwell's No. 1 Kennedy, SW SW NW Sec. 22-3-23w.
Drlg. 600 ft.

Pratt County

Shally Oil Co. et al's No. 1 Comm. Gilchrist, C SE¼ Sec. 7-28-11w.
Viola lime 4,227 ft.; 196,000 ft. of gas; U.R. 8-in. csg.

Reno County

Daws & Dustin's No. 1 Ghormley, C NE NW Sec. 17-24-7w.
Spudded and shut down.
Parsker et al's No. 1 Hiett, SE SW NE Sec. 24-24-4w.
U.R. 12-in. csg. to 1,485 ft.
Shell Pet. Corp.'s No. 1 Reese, center W½ W½ SW¼ Sec. 11-26-9w.
Viola 4,123 ft.; flowed 676 bbls. in 24 hrs.; set 8-in. csg. 4,135 ft.; T.D. 4,-156 ft.; completed.
Winkler & Koch et al's No. 1 Brownlee, C NW SW Sec. 31-24-10w.
Coring 3,549 ft.

Rice County

Day's No. 1 Mason, NW NE NE Sec. 23-21-7w.
S.D. 2,490 ft.
Detrick et al's No. 1 Monroe C NE NE Sec. 9-20-7w.
T.D. 975 ft.
Empire O. & R. Co.'s No. 1 Schroeder, SW SE SE Sec. 7-18-9w.
Drlg. 2,925 ft.
Detrick et al's No. 1 Conner, C NE NE Sec. 25-19-7w.
T.D. 2,765 ft.

Rooks County

El Dorado Refining Co.'s No. 1 Marshall, C SE SE Sec. 8-7-17w.
Hole full water 3,135 ft.; U.R. 8-in. csg.
F. A. Gillespie & Sons' No. 1 Low, NE NE NW Sec. 12-6-18w.
T.D. 1,516 ft.; fishing.
Murfin et al's No. 1 Westhusin, NE NE SE Sec. 19-9-16w.
S.D. 1,300 ft.

Rush County

R. L. Byers et al's No. 1 Ewing, NW SW SW Sec. 35-19-15w.
Bldg. rig.
Ramsey Pet. Co. et al's No. 1 Darkes, C W½ W½ NW Sec. 5-17-20w.
Simpson 4,090 ft.; 600 ft. water in hole at 4,115 ft.; drlg. 4,169 ft.

Russell County

Central Pet. Co.'s No. 1 Boxberger, NW cor. Sec. 36-15-15w.
U.R. 8-in. csg. to 2,575 ft.
Coralena Oil Co.'s No. 1 Berrick, NE NW NE Sec. 6-15-13w.
Oswald 2,894-2,928 ft.; swabbed 65 bbls. oil in 6 hrs.; water 3,219-20 ft.; plugged back to 2,945 ft.
L. D. Davidson et al's No. 1 P. Polcyn, SE SW NW Sec. 6-14-15w.
Drlg. 2,375 ft.
T. C. Johnson et al's No. 1 Mermis, NE NE SW Sec. 29-13-15w.
Siliceous lime 2,357-75 ft.; water; abandoned.
Sam Murphy et al's No. 1 Enschutz & Schaffer, SW cor. Sec. 10-15-13w.
Rigging up.
Murfin et al's No. 1 Gorham estate, NE NE SE Sec. 29-14-15w.
Drlg. 2,210 ft.
Phillips Petroleum Co. and Sinclair Prairie Oil Co.'s No. 1 Driscoll, NW NW SE sec. 31-15-11w.
Rigging up rotary.

Sedgwick County

Derby et al's No. 1 Bartholomew, SW NW NW Sec. 8-27-4w.
Siliceous 4,127 ft.; T.D. 4,155 ft.; water; P.B. 4,066 ft. and drilled to 4,017 ft.; acidized; no test.
Dickey Oil Co.'s No. 1 Wilbur, SW cor. 15-27-1w.
Drlg. 1,434 ft.
Dickey Oil Co. et al's No. 1 Chase, SE cor. Sec. 11-27-2.
Siliceous 3,262-79 ft.; water; abandoned.

Stafford County

Atlantic Oil Producing Co., Phillips Petroleum Co. et al's No. 1 Brown C NW NE Sec. 16-23-13w.
Siliceous lime 3,900 ft.; water at 3,-919½; T.D. 3,940 ft.; plugged back to 3,750 ft.; standardizing.

Sumner County

Orcutt & Stewart's No. 1 Newton, SE cor. Sec. 21-30-2.
Spudded.
C. Pulse's No. 1 Buss, NW cor. Sec. 12-33-2.
Drlg. 1,162 ft.
D. J. Wilson et al's No. 1 Clark, 1,320 ft. from W and 25 ft. from S line of NW Sec. 15-35-1w.
Sand 2,538-40 ft., show of oil and gas.
Winkler & Koch et al's No. 1 Belsley, SW SW NW Sec. 2-32-2w.
Siliceous 4,359-4,408 ft.; water; abandoned.

Trego County

Central Commercial's No. 1 Wagg, NW NW SE Sec. 17-13-21w.
T.D. 1,260 ft.
Hansa & Lauck and Olson Drlg. Co.'s No. 1 Lang, SE SE NW Sec. 1-14-21w.
Rainbow of oil 4,050 ft.; drlg. 4,109 ft.
Vickers et al's No. 1 Becor, NW NW NW Sec. 25-15-24w.
Siliceous lime 4,405 ft.; T.D. 4,472 ft.; 5-in. casing froze; will move in heavier equipment.

Woodson County

Coulter, Davidson et al's No. 1 Parke, NW cor. NE Sec. 25-25-13.
Fishing at 1,454 ft.

GULF COAST WILDCATS

Week Ending November 16

Raccoon Bend—Austin County

Humble O. & R. Co.'s No. 1 Buchanan, 465 ft. SW line, 309 ft. NW line of lease, Wm. C. White Sur. (workover).
T.D. 3,595 ft.; preparing to deepen.
Humble O. & R. Co.'s No. 7 McCasland, 297 ft. SW of most northerly corner of A. T. McCasland tract, thence 166 ft. NW at right angles, Wm. C. White Sur.
T.D. 1,160 ft.; 10¾-in. csg. at 1,138 ft.
Humble O. & R. Co.'s No. 16-X Woodley, 750 ft. NE of SW line, 350 ft. NW of SE line, 300 ft. SE of No. 15-X, Wm. Harvey Sur.
T.D. 2,458 ft.; top sand 2,400 ft.; 7-inch csg. at 2,397 ft.; preparing to pump.
Humble O. & R. Co.'s No. 8-X Hellmuth, 2,095 ft. from NW line, southeasterly along N line of R. Hellmuth tract, 464 ft. SW at right angles from NE line of lease, Wm. Harvey Sur.
T.D. 4,097 ft.; top sand 4,025 ft.; set 7-in. csg. at 4,017 ft.; I.P. 12 bbls. per hour, ¾-in. choke; T.P. 480 lbs.; C.P. 540 lbs.
Humble O. & R. Co.'s No. 8 Wilson, 150 ft. NE of SW line, 1,000 ft. SE No. 6-X. William Harvey Sur.
T.D. 3,295 ft.; I.P. 50 bbls. of net oil in 24 hrs.
Humble O. & R. Co.'s No. 3 H. F. Granen, 682 ft. NE of No. 1, 150 ft. SE of NW¼ of 63.5-ac. tract, Smeathers Sur.
Location.

Damon Mound—Brazoria County

Intercoastal Oil Co.'s No. 14 Wisdom, 34 ft. NE of SW line, 43 ft. NW of SE line of Lot A, Blk. 51, A. Darst Sur.
Location.
Henry Wisdom's No. 4 fee, 200 ft. due W of No. 3, A. Darst Sur.
Rig up.

Hastings—Brazoria County

Humble O. & R. Co.'s No. 1 G. W. Nelson, 330 ft. N and W of SE cor. of Lot 3, Sec. 36, approx. 660 ft. W of No. 2 Cannon, H.T.&B. Sur. No. 36.
Set 16-in. csg. at 112 ft.
Humble O. & R. Co.'s No. 2 Cannon, 330 ft. out of NE cor. of 40-ac. tract, H.T.&B. Sur. No. 36.
T.D. 5,929 ft.; 7-inch csg. at 5,697 ft.; I.P. 25 bbls. per hour, ¾-in. choke; T.P. 950 lbs.; C.P. 950 lbs.
Humble O. & R. Co.'s No. 1 J. F. Bridges, center of N 10 acres of 20-ac. lease, A.C.H.&B. Sur. No. 2.
Location.
Humble O. & R. Co.'s No. 2 J. F. Bridges, center of S 10 acres of 20-ac. lease, A.C.H.&B. Sur. No. 2.
Location.
Stanolind O. & G. Co.'s No. 2 Shaw, 330 ft. W of most northerly NE cor. of 120-acre tract, H.T.&B. Sur. No. 36.
Drlg. shale 3,360 ft.
Stanolind O. & G. Co.'s No 4 Drake, 330 ft. S, 330 ft. E of most westerly NW cor. of Drake 120-acre tract, H.T.&B. Sur. No. 36.
Location.
Stanolind O. & G. Co.'s No. 3 Pennock, 1,320 ft. S, 330 ft. E of NW cor. of 40-acre tract, H.T.&B. Sur. No. 36.
Drlg. sand 743 ft.
Stanolind O. & G. Co.'s No. 1 Whiton, 330 ft. S, 500 ft. W of the NE cor. of G. W. Whiton 10-ac. tract, A.C.H.&B. Survey No. 2.
T.D. 6,080 ft.; 7-in. csg. at 5,840 ft.; I.P. 491 bbls. per day, ¼-in. choke; T.P. 900 lbs.; C.P. 900 lbs.
Stanolind O. & G. Co.'s No. 2 Kidd, A.C. H.&B. Sur. No. 2, 330 ft. E of most easterly W line, 416 ft. S of N line of 58.4-ac. tract.
T.D. 6,137 ft.; set 239 ft. of 5-in. blank liner; W.O.C.
Stanolind O. & G. Co.'s No. 3 Williams, A.C.H.&B. Sur. No. 1, 330 ft. W, 119.4 ft. S inside of NW cor. of 58.5-ac. tract.
Running tubing and screen at 6,106 ft.; 7-in. csg. at 6,093 ft.; completed; I.P. 415 bbls. per day, ¼-in. choke.
Stanolind O. & G. Co.'s No. 2 Drake, 330 ft. N, 1,650 ft. W from SE cor. of 120-ac. lease, H.T.&B. Sur. No. 36.
Derrick.
Stanolind O. & G. Co.'s No. 2 Pennock, 330 ft. N, 1,650 ft. W from SE cor. of 40-ac lease, H.T.&B. Sur. No. 36.
T.D. 6,080 ft.; preparing to run csg.
Stanolind O. & G. Co.'s No. 4 Sneed, 330 ft. S, 330 ft. W of NE cor. of Lot 12, D. M. Jay Subd., on Sneed 225-ac. tract, A.C. H.&B. Sur. No. 2.
Drlg. shale 3,457 ft.

Manvel—Brazoria County

Alpha Pet. Co.'s No. 1 Hart, 185 ft. NSL. 330 ft. EWL. Lot 9, H.T.&B. Sur.
T.D. 5,721 ft.; I.P. 618.42 bbls. per day, ¼-in. choke; T.P. 500 lbs.; C.P. 550 lbs.
Gulf Prod. Co.'s No. 5 Colby, 330 ft. from NW line of lease, 660 ft. SW of No. 3, T. Spraggins Sur.
Drlg. shale 4,456 ft. (corrected).
Jay Simmons' No. 1 Wilson, center of Lot 25, H.T.&B. Sur. No. 23.
Location.
Sinclair Prairie Oil Co.'s No. 1 Michaelson, 330 ft. E of W line and midway of N and S lines, Lot 19, H.T.&B. Sur. No. 24.
Location.
J. W. Sorrells' No. 1 Swift, Blk. 21, Abst. 218, H.N. Little Sur.
Derrick.
Texas Co's No. 19 Houston Oil Field Assn., 330 ft. N, 76 ft. from SW cor. of Lot No. 31, A.C.H.&B. Sur. No. 91.
Drlg. shale and lime 2,591 ft.
Texas Co.'s No 17-B Belcher, N 48 deg., W 2,200 ft., N 42 deg., 955 ft. from S cor. of lease and survey, H. N. Little Sur.
Drlg. shale and lime 2,769 ft.
Texas Co.'s No. 2 John Groce, 857 ft. S. 200 ft. E of NW cor. of Chas. O'Donnell Sur.
Drlg. lime 3,877 ft.
Texas Co.'s No. 1 Dooman, 990 ft. N, 42 deg. E and 330 ft. S, 48 deg. E from W cor. of Lot 17, T. Spraggins Sur.
Drlg. shale and lime 4,062 ft.
Texas Co.'s No. 4 Rash, 48 deg. E, 1,650 ft. S and 42 deg. W, 330 ft. N of NE cor. of lease, T. Spraggins Sur.
Plugged back to 4,198 ft. from 4,300 ft.; 7-in. csg. at 4,198 ft.; preparing to perforate csg.
Texas Co.'s No. 2 Dawson, 247 ft. S, 241 ft. W of NE cor. of Lot 58, H.T.&B. Sur. No. 23.
Location.

Pledger—Brazoria County

Humble O. & R. Co.'s No. 2 Smith, 2,050 ft. NE of SW line, 1,810 ft. NW of SE line, 2,200 ft. SE of NW line, Troy & Moore Sur.
Rig up.
Humble O. & R. Co.'s No. 3 Smith, 5,187 ft. NE of most southerly SW line, 2,103 ft. NW of SE line, D. McNeel Sur.
T.D. 6,750 ft.; top sand 6,642 ft.; 7-in. csg. 6,568 ft.; I.P. 3,500,000 ft. of gas per day, ¼-in. choke; T.P. 2,300 lbs.; C.P. 900 lbs.

West Columbia—Brazoria County

Varner Oil Co.'s No. 1 Hogg, 300 ft. from most easterly W line and 2,600 ft. from N line of 400-ac. tract, M. Varner Sur.
Spudded and S.D.

Port Lavaca—Calhoun County

Crown Central Oil Co.'s No. 1 Wilson, 400 ft. NW line, in center of tract, A. Esparza Sur.
T.D. 6,315 ft.; plugged back 3,959 ft.; drlg. shale 5,823 ft.
Halliburton Oil Co.'s No. 4 Burton, M. Sanches Sur.
7-in. csg. at 6,224 ft.; T.D. 6,266 ft.; I.P. 79 bbls. per day, 3/16-in. choke; T.P. 300 lbs.; C.P. 1,400 lbs.

Anahuac—Chambers County

Domestic Exploration Co.'s No. 1 Marshall, 466 ft. out of NE cor. of A. W. Marshall 54.6 acre tract, H.&T.C. Sur., Sec. 55.
Rig up.
Gulf Prod. Co.'s No. 1 Knowles, 2,154 ft. SN line, 467 ft. EW line, Sec. 48, H.&T.C. Sur.
Abd. 3,749 ft.
Humble O. & R. Co.'s No. 8 Clark, 460 ft. WE line, 2,212 ft. NS line of H.T.&C., Sec. 57.
Derrick.
Humble O. & R. Co.'s No. 10 Middleton, 466 ft. from N and E lines of A. Milton Sur. No. 58.
Location.
Humble O. & R. Co.'s No. 6 Broussard, 3,058.4 ft. from W line, 466 ft. from N line, H.&T.C., Sec. 63.
Location.
Humble O. & R. Co.'s No. 7 Clark, 1,205.5 ft. from N line, 466 ft. from W line, H.&T.C., Sec. 57.
Location.
Humble O. & R. Co.'s No. 4 White, 466 ft. NS line, 466 ft. EW line of J. McGahee Sur.
Drlg. sandy shale 1,040 ft.
Humble O. & R. Co.'s No. 1 Zappe, 466 ft. from S and E lines, H.&T.C., Sec. 51.
T.D. 1,522 ft.; 10¾-in. csg. at 1,508 ft.
Humble O. & R. Co.'s No. 2-B Broussard, 869 ft. E of No. 1-B, 466 ft. S of N line, Sec. 59, H.&T.C. Sur.
Drlg. shale and lime 4,980 ft.
Humble O. & R. Co.'s No. 3-B Broussard, 869 ft. E from No. 2-B, 466 ft. S of N line, Sec. 59, H.&T.C. Sur.
Location.
Humble O. & R. Co.'s No. 9 Middleton, 873 ft. S of No. 5, 466 ft. W of E line, Sec. 58, H.&T.C. Sur.
Drlg. shale 4,187 ft.
Humble O. & R. Co.'s No. 2 White, 933 ft. W from No. 2, 466 ft. N of S line of lease, James McGahee Sur.
T.D. 7,077 ft.; top sand 6,993 ft.; 7-in. csg. at 7,039 ft.; I.P. 26.75 bbls. per hour, ¼-in. choke; T.P. 1,100 lbs.; C.P. 1,200 lbs.
Humble O. & R. Co.'s No. 6 Clark, 1,339 ft. N of S line, 466 ft. E of W line of Sec. 57, H.&T.C. Sur.
Location.
Humble O. & R. Co.'s No. 7 Middleton, 466 ft. E of W line and N of S line of 100-ac. tract in NE cor. of Sec. 56, H.&T.C. Sur.
T.D. 7,114 ft.; top sand 7,110 ft.; set 7-in. csg. at 7,094 ft.
Humble O. & R. Co.'s No. 8 Middleton, 2,212 ft. E of W line, 466 ft. N of S line of Sec. 58, H.&T.C. Sur.
Drlg. shale 6,870 ft.
Humble O. & R. Co.'s No. 2 Broussard, 2,332 ft. E of W line, 2,332 ft. N of S line of Sec. 63, H.&T.C. Sur.
Location.
Sun Oil Co.'s No. 4 White, 933 ft. W of No. 3, 516 ft. S of N line of lease, J. McGahey Sur.
10¾-in. csg. at 1,243 ft.; W.O.C.
Johnson & Anderson's No. 1 J. T. White, 466 ft. from S and E lines of N 400 acres of James McGahey Sur.
S.D. 5,717 ft.

Barbers Hill—Chambers County

Sun Oil Co.'s No. 1 Higgins.
T.D. 5,090 ft.; flowing by heads.
Sun Oil Co.'s No. 18 Wilburn, 80 ft. N, 75 ft. E of SW cor. of tract, Wm. Hodges Sur.
W.O.C. 1,100 ft.
Stanolind Oil & Gas Co.'s No. 11-B Wilburn, 50 ft. E of W line, 50 ft. S of N line of tract, Wm. Hodge Sur.
Rig up.
Stanolind O. & G. Co.'s No. 29 Chambers, 224 ft. E of No. 21 W. Bloodgood Sur.
Derrick.
Stanolind O. & G. Co.'s No. 31 Chambers, 20 ft. S, 50 ft. W of NW cor. of Sur. A lease.
Drlg. sandy shale 3,758 ft.

Big Creek—Fort Bend

Gulf Prod. Co.'s No. 66 Davis, 2,760 ft. NE along SE line of lease from W corner of Texas Co.'s 300-ac. lease, 1,285 ft. NW at R/A. M. Young Sur.
Drlg. shale 2,000 ft.

Blue Ridge—Fort Bend County

San Jacinto Oil Co.'s No. 2 Blakely, 360 ft. due E of No. 5, 325 ft. W from center of road, Lot 8, Blk. E, E. Drew Sur.
Moving in.
Trans State Oil Co.'s No. 1-B Blakely, 180 ft. E of W line, 175 ft. N of S line Lot 6, Blk. G, E. Drew Sur.
T.D. 4,051 ft.; I.P. 444 bbls. per day, ¼-in. choke; C.P. 675 lbs.; T.P. 552 lbs.

Boling—Fort Bend County

Texas Co.'s No. 14-A Taylor, 409 ft. NW of No. 13-A, 200 ft. NE of No. 9-A, S. F. Austin League.
T.D. 3,201 ft.; abd.

Orchard—Fort Bend County

Gulf Prod. Co.'s No. 2-A Moore, Burnap Sur.
Drlg. sand and gravel 299 ft.

Gulf Prod. Co.'s No. 44 Moore, 500 ft. NW of No. 42, Leo Burknapp Sur.
Drlg. sandy shale 3,592 ft.
Gulf Prod. Co.'s No. 43 Moore, 350 ft. E along S line of SW cor. of E.M.&G. Co. Sur. and 740 ft. N at R/A to said line of lease, 350 ft. E of No. 3 Moore.
Drlg. shale at 7,282 ft.

Thompson—Fort Bend County

Gulf Prod. Co.'s No. 14-A Gubbles, 970 ft. S of N line, 1,345 ft. W of E line, 128-ac. tract, Blk. 6, Tract No. 3, S. Kennedy Survey.
Preparing to spud.

High Island—Galveston County

Stanolind O. & G. Co.'s No. 1-C Marrs-McLean, 450 ft. S of N line of Lot 5, M. Dunman Sur.
Drlg. shale 2,741 ft.

Stanolind O. & G. Co.'s No. 1-B Smith Royalty Acct., 200 ft. EW line, 1,660 ft. NS line, Susan Hope Sur. No. 3.
Drlg. shale 3,636 ft.

Stanolind O. & G. Co.'s No. 50 Cade, 350 ft. WE line, 950 ft. NS line of 460-ac. tract, N. Fitzsimmons Sur.
Rig up.

Stanolind O. & G. Co.'s No. 51 Cade, 690 ft. SN line, 620 ft. WE line of 460-ac. tract, Fitzsimmons Sur.
Rig up.

Stanolind O. & G. Co.'s No. 49 Cade, 372 ft. from NW line, 150 ft. from NE line of N. Fitzsimmons Sur.
Drlg. shale 6,050 ft.

Stanolind O. & G. Co.'s No. 48 Cade, 900 ft. SE and 150 ft. NE of SW corner Block 4, Fitzsimmons Survey.
T.D. 5,896 ft.; cmtd. back to 5,230 ft.; 7-in. csg. at 5,178 ft.

Dickinson—Galveston County

Coast Pet. Co.'s No. 2 Maco Stewart, 660 ft. due W of No. 1, 330 ft. NS line of lease, W. K. Wilson Sur.
Drlg. sandy shale 8,393 ft.

Humble O. & R. Co.'s No. 3-B Stewart, 3,954 ft. S along E line from NE cor. and 577.2 ft. W at right angles, J. Sellers Sur.
Drlg. shale at 6,170 ft.

Humble O. & R. Co.'s No. 1-B Bayou Dev. Co., 500 ft. S of lake in NW cor. of lease, 600 ft. E of W line, John Sellers Sur.
Coring sand 9,125 ft.; topped oil sand at 9,116 ft.

Humble O. & R. Co.'s No. 1 San Leon Farm, 1,300 ft. N of N bank of Dickinson Bayou, 100 ft. E of EL of J. S. Jones Sur. in 300-ac. tract, A. Edwards Sur.
Coring broken sand 8,010 ft.; topped oil sand at 7,995 ft.

Humble Oil & Refg. Co.'s No. 6-A Maco Stewart, 6,087 ft. S of NE corner, 1,390 ft. W of E line and 1,390 ft. E of W line and 466 ft. N of S line of Stewart Coring shale at 8,771 ft.

Humble O. & R. Co.'s No. 5-A Stewart, 466 ft. W of E line of Stewart "A" Lease, 5,500 ft. due S of No. 2-A Stewart, John Sellers Sur.
Rig.

Humble O. & R. Co.'s No. 1 E. E. Anderson, 375 ft. N of S line, and midway between E and W lines of Lot No. 4, John Sellers Sur.
T.D. 9,127 ft.; I.P. 17.6 bbls. per hour, ¼-in. choke; T.P. 2,950 lbs.; C.P. 3,-250 lbs.

Pure Oil Co.'s No. 2 J. W. Shelor, 779 ft. N. 182 ft. W of N. I. Shelar, B.B.B. &C. Sur.
T.D. 8,481 ft.; P.B. 4,815-4,650 ft.; sidetracking 3,092 ft.

Stanolind O. & G. Co.'s No. 3 State, 633 ft. SE of No. 1, 218 ft. N of S bank of Dickinson Bayou Sur.. Tract No. 3.
Sidetracked at 7,347 ft. and cemented off fish, topped plug at 7,015 ft.; cmtd. back 140 ft.; preparing to set whipstock.

Stanolind O. & G. Co.'s No. 2 State, 1,369 ft. E of No. 1 State.
Drlg. sand and lime 3,536 ft.

Turman Oil Co.'s No. 2 Piazza, 331 ft. W of E line, 730 ft. S of N line, 945 ft. E of No. 1, J. S. Sherman Sur.
Location.

Arriola—Hardin County

Houston Oil Co.'s No. 4-X fee, 3,630 ft. from E line, 400 ft. SW of No. 5, E. Arriola Sur.
(O.W.D.D.); T.D. 3,402 ft.; I.P. 5 bbls. per day, ¼-in. choke; T.P. 1,050 lbs.

Batson—Hardin County

D. & L. Prod. Co.'s No. 1 Hooks, 100 ft. S of N line, 300 ft. E of W line 26.75-ac. tract, W. Donoho Sur.
Drlg. sandy shale 6,245 ft.

John Deering et al's No. 1 J. W. Whitley, 140 ft. SN line, 240 ft. EW line of 130-ac. tract, W. Donoho Sur.
S.D. 780 ft., rigging up heavier rig.

Shell Pet. Corp.'s No. 2 Jackson, 190 ft. W EL, 395 ft. N of SL of lease, W. Donoho Sur.
Location.

Texas Co.'s No. 2 Christian, 510 ft. S. 460 ft. E of NW cor. of Willis Donoho League.
Rig up.

Saratoga—Hardin County

Hines' No. 2 Caswell, 8,600 ft. N of S line, 1,376 ft. E of W line of B.B.B.&C.R.R. Co. Sur. No. 72.
S.D. 3,695 ft.

Rio Bravo Oil Co.'s No. C-143, 410 ft. E of W line, 330 ft. N of S line, of J. F. Cotton Sur.
T.D. 546 ft.; set 42 ft. of screen; putting on pump.

Rio Bravo Oil Co.'s No. C-144.
Location.

Rio Bravo Oil Co.'s No. C-142, 460 ft. E of W line of 100-acre tract, J. F. Cotton Sur.
T.D. 927 ft.; I.P. 21 bbls. per day.

Pierce Junction—Harris County

J. S. Abercrombie et al's No. 7 John Ritter, 535 ft. E of W line, 156 ft. N, 17 deg. 42 ft. W at right angles, James Hamilton Sur.
Drlg. 2,750 ft.

Gulf Prod. Co.'s No. 11 H. C. Cain, 390 ft. from W line, thence 439 ft. at R/A to N line of 130-ac. tract, Jas. Hamilton Sur. No. 98.
Drlg. sand and shale 6,232 ft.

Navarro Oil Co.'s No. 3-B Cain, Jas. Hamilton Sur.
T.D. 7,078 ft.; shale; heaved to 7,018 ft.; P.B. to 6,130 ft.; sidetracked and drilled at 5,554 ft.; twisted off D.S.; fishing.

Rio Bravo Oil Co.'s No. 1-A Settegast fee, on line between B.B.&C. and Joseph Kopman Sur., 350 ft. due W of SE cor. of Settegast 63.25-ac. tract on survey and property line.
T.D. 4,209 ft.; I.P. 492 bbls. in 18 hrs., 5/16-in. choke.

Rio Bravo Oil Co.'s No. 3 Rio Bravo, G.H.&S.A.R.R., 1,400 ft. EW line of survey, 10 ft. SN line at right angles, J. Hamilton Sur.
T.D. 3,492 ft.; set whipstock at 2,538 ft.; now drlg. at 2,561 ft.

Humble—Harris County

Texas Co.'s No. 38 Koehler, 1,750 ft. N, 500 ft. E of SW cor. of the tract, J. B. Stevenson Sur.
T.D. 4,799 ft.; P.B. to 3,275 ft., 7-in. csg. at 3,164 ft.; I.P. 377 bbls. in 24 hrs., ¼-in. choke.

Mykawa—Harris County

Danciger O. & R. Co.'s No. 4 Minnetex, 300 ft. WE line, 250 ft. SN line of Lot 192, Wm. Lovett Sur.
Drlg. below 4,800 ft., no report.

West Prod. Co.'s No. 5 Irwin, 795 ft. SN line, 806 ft. WE line of lease, W. B. Walker Sur.
Drlg. shale 3,550 ft.

West Prod. Co.'s No. 2 Lobit, 403 ft. EW line, 200 ft. SN line, Lot 17, F. J. Rothas Sur.
Drlg. shale 4,250 ft.

South Houston—Harris County

Diadem Oil Co.'s No. 1 Mrs. Alice Dean, center of Lot 152, H.T.&B. Sur. No. 6, 141 ft. EW line, 100 ft. SN line of lot.
T.D. 4,734 ft.; oil sand 4,720-30 ft.; 7-in. csg. at 4,712 ft.; W.O.C.

Stanolind O. & G. Co.'s District 19, No. 1, center of Lot 8, Blk. 77.
T.D. 4,118 ft.; P.B. to 4,110 ft.; running screen and liner.

Stanolind O. & G. Co.'s District 21, center Lot 1, Blk. 62.
Drlg. sandy shale 3,165 ft.

Stanolind O. & G. Co.'s District 22, No. 1, center of Lot 8, Blk. 71.
T.D. 3,963 ft.; 9⅝-in. csg. at 3,935 ft.; running liner and screen.

Stanolind O. & G. Co.'s District 27, No. 1, center Lot 1, Blk. 102.
T.D. 1,795 ft.; 13⅜-in. csg. at 1,792 ft.

Stanolind O. & G. Co.'s No. 1 Meadowbrook, 417 ft. at right angles from NE line, 417 ft. from center line of Berry Gully, 414 ft. NW along NE line and 417 ft. southwesterly at right angles.
Abd. 6,171 ft.

Stanolind O. & G. Co.'s Drlg. District 5, No. 1, center of Lot No. 2, Blk. 7.
T.D. 3,862 ft.; 7⅝-in. csg. 3,846 ft.; I.P. 359 bbls. in 24 hours, ¼-in. choke; T.P. 500 lbs.; C.P. 615 lbs.

Stanolind O. & G. Co.'s Drlg. District 8, No. 1, center Lot 16, Blk. 32.
T.D. 3,927 ft.; 7⅝-in. csg. at 3,904 ft.

Stanolind O. & G. Co.'s Drlg. District 10, center Lot 16, Blk. 28.
Reaming salt 4,794 ft.

Stanolind O. & G. Co.'s No. 1 fee, 330 ft. S. 300 ft. E of NW cor. of 20-ac. tract, H.T.&B. Sur. No. 5.
T.D. 6,050 ft.; making electrical coring test.

Tomball—Harris County

Humble O. & R. Refg. Co.'s No. 1 Dooley, 280 ft. N of S line, 388.7 ft. W of E line of lease, J. Pruitt Sur.
Drlg. shale and lime 4,160 ft.

Humble O. & R. Co.'s No. 2 Holderreith, 500 ft. E of W line, 466 ft. N of S line, C. N. Pillot Sur.
Drlg. shale and lime 4,461 ft.

Humble O. & R. Co.'s No. 3-B Quilter, 600 ft. N of S line, 1,267 ft. W of E line of tract, A. Senchal Sur.
T.D. 5,565 ft.; set 7-in. csg.

Humble O. & R. Co.'s No. 1 Mrs. Jessie Mahaffey, 550 ft. E of W line, 422 ft. N of S line of 132-ac. tract, Jesse Pruitt Sur.
T.D. 5,571 ft.; 7-in. csg. at 5,566 ft.; swabbed; would not flow.

Humble O. & R. Co.'s No. 1 Michel, 491 ft. E of W line of Sur. and on line between lots 178 and 182 Tomball Townsite, J. Pruitt Sur.
Location.

Sun Oil Co.'s No. 1 Metzler, 600 ft. N of S line, 466 ft. E of W line of middle SW cor. of 117.5-ac. lease, C. N. Pillot Sur.
W.O.C. 966 ft.

Texas Co.'s No. 3 E. Hillegigeist, 1,829 ft. N, 430 ft. W from SW cor. of 100-acre lease and on a 199.8-ac. lease, J. House Sur.
T.D. 5,620 ft.; 7-in. csg. at 5,613 ft.; W.O.C.

Mauritz-Jackson County

Shell Pet. Corp.'s No. 1-A T. N. Mauritz, 682 ft. S, 466 ft. W of NE cor. of 166-ac. lease, A. Kountz Sur.
Drlg. shale 6,330 ft.

Texas Pacific Coal & Oil Co. and Venza Oil Co.'s No. 1 J. M. Rosborough, 330 ft. each way out of NW cor. of 416-ac. lease of M.C. Sur. No. 37.
Coring shale 5,644 ft.

Big Hill—Jefferson County

Stanolind O. & G. Co.'s No. 2-A Pipkin & Davis, 1,490 ft. SW of NE cor. of Pipkin & Davis lease along SE line of same and 50 ft. SE at right angles, William McFaddin Sur.
Drlg. oil sand 6,609 ft., 7-in. csg. at 6,590 ft.; drlg. plugs.

Stanolind O. & G. Co.'s No. 1-B Pipkin & Davis, 2,225 ft. from E line and 2,285 ft. from N line of survey, Wm. McFadden Sur.
T.D. 8,500 ft.; heaving shale at 6,678 ft.; surveying hole.

Fannett—Jefferson County

Blue Eagle Oil Co.'s No. 1 Junker, 50 ft. each way out of NW cor. of lease, W. H. Smith Sur.
T.D. 4,116 ft.; 7-in. csg. at 4,076 ft., cutting and pulling liner and screen.

Gulf Prod. Co.'s No. 9 Burrell, 2,010 ft. N along W line of 232-ac. tract from SE cor. of Thomas 446-ac. tract, thence 350 ft. E at right angles, W. H. Smith Sur.
Drlg. sand 4,408 ft.

Cleveland—Liberty County

Gulf Prod. Co.'s No. 12-C Kirby, 1,234 ft. N, 2,332 ft. E from NE cor. of J. Eldridge Sur.
Preparing to spud.

Esperson—Liberty County

General Crude Oil Co.'s No. 22 Esperson, 550 ft. N along W line of survey from SE cor. of D. K. Kokernot Sur., thence 1,185 ft. E at right angles.
Derrick.

General Crude Oil Co.'s No. 20 Esperson (workover).
T.D. 3,613 ft.; I.P. 10 bbls. per hour, ¼-in. choke.

General Crude's No. 1 Hlavaty, 467 ft. out of SE cor. of F. M. Gardner Sur.
T.D. 8,469 ft.; drill pipe stuck at 8,409 ft.; cutting drill pipe at 7,500 ft.

Hankamer—Liberty County

Eastman-Ward's No. 1 R. E. Lee, 115 ft. from N line of lease and 76 ft. W of west bank of White Bayou, Geo. Stengler Sur.
S.D. 2,707 ft.; drlg. water well.

Eljean Oil Co.'s No. 2 Exxell, 600 ft. due W of No. 1, 130 ft. from N and S lines of Levi-Barrow Sur.
S.D. 4,346 ft.

Gulf Prod. Co.'s No. 5 Crow & Jacobs, 2,900 ft. N, 2,140 ft. E of SW cor. of 300-ac. lease. H.&T.C. Sur.
Abd. 5,700 ft.

Hull—Liberty County

Gulf Prod. Co.'s No. 111 Phoenix, 1,892 ft. S along W line from NW cor., 1,625 ft. E at R/A, J. Devore League.
Drlg. sandy shale 2,979 ft.

W. B. Flynn's No. 8-B Able, 50 ft. S, 300 ft. W of NE cor. of old Humble 10-ac. tract.
Drlg. rock 1,000 ft.

Republic Prod. Co.—Houston Oil Co.'s No. 158 Dolbear, 170 ft. NW of No. 99 and 250 ft. SW of No. 156, J. Devore League.
Drlg. rock 1,879 ft.

South Liberty—Liberty County

Sun Oil Co.'s No. 58 Mitchell, 50 ft. E of W line, 385 ft. N of S line of M. G. White League.
T.D. 1,011 ft.

R. R. Lawrence's No. 1 Vandeventer, 200 ft. SN line, 100 ft. EW line of 121-ac. tract, D. Winchey Sur.
Drlg. rock 3,084 ft.

W. S. Christian's No. 1 Chambers.
T.D. 675 ft., preparing to set 7-in. csg.

Markham—Matagorda County

Hamill & Hamill's No. 3 Kountze, 150 ft. due E of No. 2, Parker Sur.
Location.

Van Vleck—Matagorda County

Skelly Oil Co.'s No. 1 Sally Johnson, 487 ft. W of E line, 395 ft. SN line of 37-ac. tract, M. Cummings Sur.
Drlg. shale 5,710 ft.

Conroe—Montgomery County

Malta Oil Co.'s No. 10 Falvey, (work over)
Pulling screen to work over.

Sun Oil Co.'s No. 28 Foster.
Bldg. derrick.

Sun Oil Co.'s No. 32 Keystone Mills.
Drlg. shale 4,850 ft.

Sun Oil Co.'s No. 10 Keystone Mills.
Derrick.

Splendora—Montgomery County

Bryce McCandless et al's No. 1 Texas Long Leaf Lbr. Co., 330 ft. from N and E lines of the W¼ of Blk. No. 8, Walker County School Land Sur.
Derrick.

Port Neches—Orange County

Texas Co.'s No. 11 Kuhn, 620 ft. N, 330 ft. E of SW cor. of 257.74-ac. tract, Mary E. Hall Sur.
Rig up.

Texas Co.'s No. 4-A Polk, 400 ft. N, 125 ft. E from SE cor. of Mary Hall Sur. No. 1, being in the T. J. Notgrass Sur.
T.D. 4,802 ft.; I.P. 108 bbls. per day.

Livingston—Polk County

Hawkeye Pet. Co.'s No. 1 Nelson, 330 ft. N of S line, 460 ft. E of W line of 300-ac. tract, A. Viesca Sur.
T.D. 4,243 ft.; 7-in. csg. 4,217 ft.; ran screen and liner and swabbed well dry; pulling screen and liner to core deeper.

Humble O. & R. Co.'s No. 21 Granbury-Smith, 832 ft. NW line, 1,827 ft. NE line of Sec. 11, A. Viesca Sur.
Derrick.

Humble O. & R. Co.'s No. 18 Granbury, 5,289 ft. SE of NW line, Sec. 10, 1,194 ft. SW of NE line, Sec. 10, A. Viesca Sur.
T.D. 4,235 ft.; 7-in. csg. at 4,224 ft.; flowing into pits; no gauge.

Humble O. & R. Co.'s No. 16 Granbury, 1,399 ft. from NW and 466 ft. from NE lines of Block No. 11, A. Viesca Sur.
Location.

Ownby Drlg. Co.'s No. 5 Pratt.
Drlg. shale 4,100 ft.

Ownby-Shell Pet. Corp.'s No. 6 Pratt, 660 ft. S of No. 1, 330 ft. W from road, A. Viesca Sur.
Location.

Ownby-Shell Pet. Corp.'s No. 4 Pratt, 466 ft. out of NW cor. of 197-ac. lease, A. Viesca Sur.
Coring sand 4,222 ft.

Sun Oil Co.'s No. 10 Pratt, 933 ft. W of No. 9, 466 ft. NSL of lease, A Viesca Sur.
Derrick.

Sun Oil Co.'s No. 9 Pratt, 660 ft. W of No. 6, 330 ft. S line of lease, A. Viesca Sur.
T.D. 4,250 ft.; 7-in. csg. 4,222 ft.; I.P. 20 bbls. in 4 hrs., ¼-in. choke; T.P. 1,100 lbs.; C.P. 1,300 lbs.

Colette Creek—Victoria County

Camp's No. 1 Kastner, 330 ft. from NE and SE lines of 52-ac. tract, Manchola Sur.
T.D. 2,842 ft., oil sand, 7-in. csg. at 2,836 ft.; swabbed dry; to work over.

Costa Oil Co.'s No. 1 Terrell, 990 ft. SWL, 330 ft. SEL of NE 125-acre tract, R. Manchola Sur.
Drlg. shale 1,400 ft.

Placedo—Victoria County

American Liberty's No. 1 Gray, 3,960 ft. SWL, 500 ft. SEL of S.A.&M.G. Sur.
Location.

Barnsdall Oil Co.'s No. 2 Gray, 4,760 ft. SWL, 500 ft. SEL of S.A.&M.G. Sur. No. 8.
Preparing to spud.

Barnsdall-Felmont Oil Co.'s No. 2 Pickering, 330 ft. NE of NE line of G.H.&S.A. R.R. Sur., Lot 1, Lander, Pickering and Traylor Subd. of the Mitchell Pastures, Black and Sanderson Sur.
T.D. 4,780 ft., 7-in. csg. at 4,748 ft., I.P. 200 bbls. per day, ¼-in. choke; T.P. 600 lbs.; C.P. 575 lbs.

Eastern Texas Pet. Co.'s No. 1-A Schovajsa, 50 ft. NW of Costa's No. 1 Schovajsa, W. Ripley Sur.
Drlg. shale 5,985 ft.

J. McDowell's No. 1 Kirasek, center Blk. 45, Placedo Townsite.
T.D. 4,771 ft.; 7-in. csg. at 4,758 ft.; I.P. 100 bbls. per day.
screen, failed to flow, will use air lift.

C. F. McGrew's No. 1 Hadley, center of 20-ac. lot, S.A.&M.G. Sur., Sec. 9, Blk. 49, Lots 1 and 2.
Location.

Smith & Gulf's No. 2 Wright, 330 ft. each way out of W cor. of lease, S.A.&M.G. Sur. No. 5.
Drlg. shale 1,500 ft.

Sun Oil Co.'s No. 1 Schneider, 330 ft. from R.R., 330 ft. from SE line of Lot 132, NE offset to Sun's No. 2 Marek, S.A.& M.G. Sur.
Coring 4,750 ft.

Westgate Oil Co.'s No. 1 Henderson and Pickering, 330 ft. each way out of SW cor. of Lot 76, S.A.&M.G. Sur.
T.D. 4,778 ft.; 7-in. csg. at 4,754 ft., killed well; rigged up new rig after the fire.

Clay Creek—Washington County

Joe Pamykol's No. 2 Clapp, 200 ft. NE of No. 1, 450 ft. SW line, 150 ft. NW line of lease, N. Clay Sur.
Skidding derrick to location.

Sun Oil Co.'s No. 11 Clay, 750 ft. NW line, 150 ft. SW line, 218-ac. tract, J. F. Perry Sur.
T.D. 1,315 ft.; D.S.T. from 1,290-1,315 ft.; tested dry gas.

Louise—Wharton County

Pure Oil Co.'s No. 1 H. F. Whiteside, 660 ft. NE and 330 ft. SE of W cor. of 80-ac. tract, M.&C. Sur., Sec. 19.
T.D. 5,160 ft.; comp.; no gauge.

Pickett Ridge—Wharton County

Texas Co.'s No. 6-A Pierce, 660 ft. N, 58 deg. E, 751 ft. S, 32 deg. E from No. 2-A, I.&G.N. Sur. No. 39.
Location.

Texas Co.'s No. 4-A Pierce, 1,980 ft. S. 32 degrees E from Pierce No. 3-A H.& G.N. Sur., Sec. 38.
Abd. 4,772 ft.

Texas Co.'s No. 5-A Pierce, 1,320 ft. N, 58 deg. E, 660 ft. S, 32 deg. E from No. 3-A, I.&G.N. Sur. No. 36.
Drlg. shale and boulders 3,536 ft.

SOUTH LOUISIANA FIELDS

Anse La Butte—St. Martin Parish

Y. D. Spell's No. 1 Begenaud, Sec. 117-9s-5e.
Drlg. shale 491 ft.

Black Bayou—Cameron Parish

Shell Petroleum Co.'s No. 29 Watkins, 2,900 ft. E, 650 ft. S of NW cor. of Sec. 17-12s-12w.
Canal completed.

Shell Petroleum Co.'s No. 30 Watkins, 3,250 ft. W, 920 ft. S of NE cor. of Sec. 18-12s-11w.
Dredging canal.

Shell Pet. Corp.'s No. 23 Watkins, 1,929 ft. S, 925 ft. E of NW cor. of Sec. 17-12s-12w.
Coring sand 4,238 ft.

Shell Pet. Corp.'s No. 26 Watkins, 3,280 ft. W, 100 ft. S of NE cor. of Sec. 18-12s-12w.
Location.

Shell Pet. Corp.'s No. 24 Watkins, 1,832 ft. W, 695 ft. S of NW cor. Sec. 18-12-12 S.D. 4,528 ft.

Caillou Island—Terrebonne Parish

Texas Co.'s No. 25 State, Sec. 17-23s-20e.
Location.

Texas Co.'s No. 26 State, 172 ft. from S line, 1,796 ft. from W line, Sec. 17-23s-20e.
Drig. sand 1,222 ft.

Texas Co.'s No. 24 Caillou Island, Sec. 17-23s-20e.
T.D. 3,971 ft.; 7⅝-in. csg. at 3,931 ft.

Texas Co.'s No. 1 State Terrebonne Bay Sec. 19-23s-20e.
T.D. 6,017 ft.; P.B. to 5,016 ft.; Abd. at 3,230 ft.

Bosco—Acadia Parish

Superior Oil Prod. Co.'s No. 1 C. B. Hernandez, 2,791.6 ft. S, 330 ft. W of NE cor. of NW¼ Sec. 34-8s-3e (workover) Old T.D. 8,659 ft.; new T.D. 9,041 ft.; I.P. 75 bbls. in 24 hrs., 10/64-in. choke; T.P. 1,700 lbs.

Superior Oil Co.'s No. 11 Larcade, 2,119 ft. E, 100 ft. S of NW cor. of Sur. 35.
T.D. 8,696 ft.; running 7-in. csg.

Tepetate—Acadia Parish

Continental Oil Co.'s No. 1 Kern, 1,610 ft. S, 660 ft. W of SE cor. of Sec. 29-7s-2w
Derrick.

Continental Oil Co.'s No. 1 Macabee, 990 ft. N, and 660 ft. E of SW cor. of 160-ac. tract, Sec. 22-7s-2w.
T.D. 1,564 ft. in sticky shale; preparing to set 10¾-in. csg.

Continental Oil Co.'s No. 1 Macantel, 990 ft. S, 660 ft. W of NE cor. of Sec. 29-7s-2w.
Drig. sticky shale 3,150 ft.

Continental Oil Co.'s No. 1 Homesteaders Dev. Co., 3,300 ft. W, 2,640 ft. N of SE cor. of Sec. 29-7s-2w.
T.D. 8,800 ft.; 7-in. csg. 8,617 ft.; I.P. 672 bbls. per day, ¾-in. choke; T.P. 2,-488 lbs.

Darrow—Ascension Parish

Humble O. & R. Co.'s No. 8 Gumble, 505 ft. SW of No. 6, 1,147 ft. SE of No. 2, Sec. 31-10s-2e.
Drig. shale and lime 5,609 ft.

Sorrento—Ascension Parish

Athens Oil Co.'s No. 3 United Land, 400 ft. W of No. 2, Sec. 15-10s-4e.
Location.

Cameron Meadows—Cameron Parish

Magnolia Pet. Co.'s No. 15 Cameron Meadows, 1,760 ft. W, 650 ft. S of NE cor. of NE¼ of Sec. 21-14s-13w.
T.D. 3,664 ft.; 9⅝-in. csg. at 3,642 ft.; W.O.C.

Burton Sutton Oil Co.'s No. 10 School Land, Sec. 16-14s-13w.
Derrick.

Burton Sutton Oil Co.'s No. 9 School Land, 561 ft. N of S line, 293 ft. W of E line of Sec. 16-14s-13w.
Testing at 3,600 ft.; 7-in. csg. at 3,-571 ft.

Burton Sutton Oil Co.'s No. 4 School Land, Sec. 16-14s-13w.
Derrick.

Choctaw Dome—Iberville Parish

Standard Oil Co.'s No. 8 Myrtle Grove Wilbert, 500 ft. N, 725 ft. W of SE cor. of SW¼ of Sec. 52-9s-11e.
Location.

Standard Oil Co.'s No. 6 Gay, 400 ft. N, 50 ft. W of No. 5, Sec. 52-9s-11e.
Location.

Zeni Oil Co.'s No. 1 Schwing, Sec. 19-17s-24e.
T.D. 4,163 ft.; P.B. to 1,500 ft.; drig. shale 2,425 ft.

Dog Lake—Terrebonne Parish

Texas Co.'s No. 11 State, 1,100 ft. N, 2,476 ft. W of SE cor. of Sec. 21-21s-16e.
S.D. 2,914 ft.

Four Isle—Terrebonne Parish

Texas Co.'s No. 6 State, 1,933 ft. S, 2,100 ft. W of NE cor. of Sec. 23-21s-16.
Drig. lime 6,677 ft.

Texas Co.'s No. 8 La. Land & Expl. Co., 2,177 ft. E, 1,385 ft. S of NW cor. Sec. 24-21s-16e.
Drig. sandy shale 6,836 ft.

Texas Co.'s No. 5 State, 985 ft. S, 2,327 ft. E of NW cor. of Sec. 24-21s-16e.
Location.

Garden Island Bay—Plaquemines Parish

Texas Co.'s No. 17 State, 1,970 ft. N, 1,648 ft. E of SW cor. of Sec. 27-22s-23e.
Drig. shale 579 ft.

Texas Co.'s No. 18 State, 1,368 ft. N, 2,318 ft. E of SW cor. of Sec. 27-22s-23e.
Location.

Texas Co.'s No. 13 State, 3,291 ft. S and 1,694 ft. W of NE cor. Sec. 107-22-32.
Rig up.

Gillis—Calcasieu Parish

Fohs Oil Co.'s No. 1 Powers, Sec. 14-9s-8w.
Drig. sand and gravel 50 ft.

Fohs Oil Co.'s No. 8 Castle, 275 ft. N and E of SW cor. NE¼ of SE¼ Sec. 14-9s-8w.
Coring sand 7,030 ft.

Union Sulphur Co.'s No. 4 Castle, 330 ft. N, 1,850 ft. W of SE cor. of NE¼ of Sec. 14-9s-8w.
Location.

Union Sulphur's No. 5 Barbe, 1,160 ft. W, 589 ft. N of SE cor. of NE¼ Sec. 11-9s-8w.
Drig. shale 6,753 ft.

Union Sulphur's No. 14 State, 1,462 ft. N, 69 ft. W of SE cor. NE¼ Sec. 11-9s-8w.
Location.

Union Sulphur's No. 4 Powell, 585 ft. S, 1,621 ft. E of NW cor. of Sec. 12-9s-8w.
Derrick.

Union Sulphur Co.'s No. 4 Reeves, 950 ft. W, 290 ft. S of NE cor. of SW¼, NW¼ Sec. 12-9s-8w.
T.D. 6,712 ft.; I.P. 310 bbls. per day.

Union Sulphur Co.'s No. 7 State, 1,316 ft. N, 199 ft. E of SW cor. Sec. 12-9s-8w.
Location.

Union Sulphur Co.'s No. 12 State, 2,310 ft. N, 1,650 ft. E of SW cor. of Sec. 12-9s-8w.
S.D. 7,100 ft.

Union Sulphur Co.'s No. 13 State, 1,464 ft. E, 2,088 ft. N of SW cor. of Sec. 12-9s-8w.
Location.

Guerdan—Vermillion Parish

Pure Oil Co.'s No. 6 Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w.
T.D. 9,545 ft.; cutting screen and liner.

Hackberry—Cameron Parish

Browning Oil Co.'s No. 1 Ellender, Sec. 27-12s-10w.
Drig. shale and lime 3,350 ft.

Calcasieu Oil Co.'s No. 5 Hanzen, 2,520 ft. W, 803 ft. S of NE cor. of Sec. 14-12s-10w.
T.D. 5,962 ft.; I.P. 241 bbls. per day.

Gulf Refg. Co.'s No. 19 Erwin, 1,315 ft. W along S line of the SE cor. of Sec. and 960 ft. at R/A to S line, Sec. 13-12-10w.
Drig. shale 8,076 ft.

Romac Oil Co.'s No. 2 Vincent, Sec. 29-12s-10w.
Drig. rock 2,040 ft.

Stanolind O. & G. Co.'s No. 10-B Gulf Land, Sec. 14-12s-10w.
Drig. sand 302 ft.

Stanolind O. & G. Co.'s No. 9 Gulf Land, 1,650 ft. S, 750 ft. W from NE cor. SW¼ of Sec. 14-12s-10w.
Drig. shale 441 ft.

Texas Co.'s No. 11 State, 961 ft. E, 152 ft. N of NE cor. of Sec. 13-12s-9w (workover).
Old T.D. 6,092 ft.; coring sand 6,305 ft.

Texas Co.'s No. 18 State, N 13 deg. 20 ft. W, 4,000 ft. from No. 13, Sec. 44-12s-9w.
Drig. shale 2,330 ft.

Iowa—Jefferson Davis Parish

Shell Pet. Corp.'s No. 19 Heyd, 1,200 ft. S, 990 ft. W of NE cor. of NW¼ of Sec. 13-9s-7w.
Derrick.

New Iberia—Iberia Parish

Canal Oil Co.'s No. 2 Sabatier et al, 200 ft. NE along lease line from W cor. of Canal-Bernard lease in Sec. 54, thence NW at right angles of Sec. 53-12s-7e.
T.D. 2,802 ft.; 7-in. csg. 2,750 ft.; waiting on pumping unit.

Harrison & Abercrombie's No. 4 Schwing, Sec. 56-12s-7e.
T.D. 6,789 ft.; preparing to drill deeper.

Kitos Oil Co.'s No. 1 Sealy, Sec. 56-12s-7e.
Derrick.

Jennings—Acadia Parish

Abshire-Bolyard's No. 3 Clemonds, 1,500 ft. N, 95 ft. E of SW cor. Sec. 46.
Preparing to test at 2,341 ft.

Yount Lee Oil Co.'s No. 15 Houssiere-Latriele.
Drig. shale 6,762 ft.

Lafitte—Jefferson Parish

Texas Co.'s No. 2 Rigolet Co-operative Co., 467 ft. S, 1,194 ft. W of NE cor. Sec. 16-19s-24e.
Drig. shale 3,449 ft.

Lake Hermitage—Plaquemines Parish

Humble O. & R. Co.'s No. 1 State Land, 1,980 ft. E, 200 ft. N of Texas Gulf No. 6, Sec. 11-18s-25e.
T.D. 4,462 ft.; P.B. to 2,930 ft.; abd. 3,984 ft.

Lake Barre—Terrebonne Parish

Texas Co.'s No. 34 State, Sec. 40-21s-19e.
Drig. shale 2,558 ft.

Lake Felix—Terrebonne Parish

Texas Co.'s No. 14 State, Sec. 1-22s-18e.
Drig. shale and lime 6,590 ft.

Leesville—Lafourche Parish

Texas Co.'s No. 40 Leesville, Sec. 27-21s-22e.
Drig. 230 ft.

Texas Co.'s No. 39 Leesville, 125 ft. S, 1,481 ft. W of NE cor. SE¼ of Sec. 27-21s-22e.
10¾-in. csg. at 838 ft.; W.O.C.

Texas Co.'s No. 25 Leesville.
Derrick.

Texas Co.'s No. 23 Leesville, 975 ft. S, 1,-975 ft. W of NW cor. of SW¼ Sec. 26-21-22.
Derrick.

Lockport—Calcasieu Parish

Magnolia Pet. Co.'s No. 10 Farquhar, 300 ft. S, 200 ft. E of NW cor. SE¼ SE Sec. 8-10s-9w.
Drig. sandy shale 6,405 ft.

Port Barre—St. Landry Parish

Pan American Prod. Co.'s No. 1 Haas & Hierch, 1,118 ft. NW along property line from E cor. of lease, thence SW at right angles 450 feet.
Drig. shale 1,237 ft.; 10¾-in. csg. at 1,220 ft.

Roanoke—Jefferson Davis Parish

Glassel et al's No. 1 La. Irrigation Mill Co., 695.5 ft. E and 475 ft. N of SW cor Sec. 1-9s-4w.
Location.

Humble O. & R. Co.'s No. 4 Kratzer, 75 ft. SN line, 375 ft. WE line of Sec. 11-4w-9s.
Drig. shale and lime 7,965 ft.

Humble O. & R. Co.'s No. 3 Kratzer, 1,333 ft. NS line, 440 ft. WE line of M. Kratzer 120-ac. tract, Sec. 11-9s-4w.
T.D. 8,155 ft.; shale and lime; sand with oil show from 7,990-93 ft.; D.S.T. from 7,980-92 ft., ¼-in. choke; tested salt water.

Sweet Lake—Calcasieu Parish

Pure Oil Co.'s No. 13 Yount Lee, 800 ft. S, 66 deg. 42 ft. E of No. 12, Sec. 13 13-13.
T.D. 7,530 ft.; coring deeper.

Sulphur—Calcasieu Parish

Union Sulphur Co.'s No. 815 fee, Sec. 29-9s-10w.
Drig. shale 555 ft.

Union Sulphur Co.'s No. 816 fee, Sec. 29-9s-10w.
Drig. sandy shale 3,337 ft.

Union Sulphur Co.'s No. 817 fee, Sec. 29-9s-10w.
Location.

Starks—Calcasieu Parish

Gulf Prod. Co.'s No. 38 Lutcher Moore, Sec. 19-19s-12w.
Drig. sand 50 ft.

White Castle—Iberville Parish

Shell Pet. Corp.'s No. 2 Shingle, 250 ft. S, 275 ft. E of NW cor. of Shingle lease.
Rig up.

Miscellaneous Wildcats

TEXAS

Austin County

T. F. Wood et al's No. 1 Trenchman, 330 ft. from SE line of a 50-ac. tract, James Cummins Sur.
S.D. 750 ft.

Brazoria County

British-American Oil Prod. Co.'s No. 1 W. R. Nash, 1,191 ft. E of W line, 325 ft. S of N line of Thos. Alsberry League.
Made D.S.T. from 4,125-42 ft.; no results; will core to 4,147 ft. and run screen.

Gulf Prod. Co.'s No. 1 Wilkes & Smith, 5,510 ft. W along N line of 550-ac. tract from NW cor. of 211-ac. tract, thence 990 ft. S at R/A James Hall Sur.
Drig. shale 5,040 ft.

R. R. Osborne's No. 1 John L. Jones, 330 ft. each way out of N cor. of S½ of Lot 7, Blk. 1, J. C. Smith Sur.
S.D. 20 ft.

Texas Co.'s No. 3 Freeport Sulphur Co., Conception Arcola Sur.
Drig. sand rock 2,860 ft.

Burleson County

Carl Dyer et al's No. 1 C. W. Young, 750 ft. EW line, 320 ft. SN line of 140-ac. tract, John Byrd Sur.
Preparing to set surface csg. at 40 ft.

Red Bank Oil Co.'s No. 1 Q. B. Crain, 330 ft. from N and W lines of 140-ac. tract and W. C. Pierce Sur.
Location.

Chambers County

Black Gold Oil Co.'s No. 1 Borrow, 6,423 ft. NW of the SE line, 2,080 ft. SW of NE line, Ruben Borrow Sur.
Rig up.

Salt Dome Oil Co.'s No. 1 A. B. Lawrence, James Grant Sur., 2,650 ft. NW of SE line, 6,060 ft. SW of NE line.
Abd. 7,005 ft.

South Gulf Oil Co.'s No. 1 J. T. White, 1,653 ft. from E line, 466 ft. from S line of 1,476-ac. tract, James McGahey Sur.
Location.

Stanolind O. & G. Co.'s No. 1 A. B. Middleton, 426 ft. from W line, 466 ft. from S line of A. D. Middleton 120-ac. tract, Shadrock Burney Sur.
T.D. 120 ft.; 18⅝-in. csg. at 112 ft.; W.O.C.

Calhoun County

Continental Oil Co.'s No. 3 American Realty Co., 150 ft. NE of No. 2, Pedro Garcia Sur., Lot 1, Blk. "C."
Skidding derrick.

Continental Oil Co.'s No. 2 American National Realty Co., 660 ft. from NW line, 660 ft. from NE line of Sec. 6, Blk. C, Pedro Garcia Sur.
Cut 6-in. csg. 7,114 ft.; abd.

Humble O. & R. Co.'s No. 1 Mrs. Eliza Weider, 5,685 ft. S, 55 deg. W from a part of intersection of St. L.B.&W. R.R. Sur. and NW line of Jose Maria Rios Sur., 7,210 ft. S, 35 deg. E at R/A Gardner Smith Sur.
Moving in.

Colorado County

Coyle & Concord's No. 1 fee, 550 ft. from N line, 1,950 ft. from E line of Sec. 41, I.&G.N. Sur.
10¾-in. csg. 610 ft.; T.D. 698 ft.

Fort Bend County

Bunte O. & G. Co.'s No. 1 A. P. George, 4,132 ft. NW along SW line from S cor. of survey, thence due N 1,320 ft., thence due E 2,970 ft., thence due N 330 ft. to location, approx. 3,100 ft. NW along SW line from S cor. of survey and 2,750 ft. NE at right angles, J. Jones Sur.
Drig. shale 5,469 ft.

Texas Gulf Prod. Co.'s No. 1 K. B. Winston, 1,490 ft. E of W line, 338 ft. N of S line of 350-ac. tract, S. Isaacs Sur.
Coring 7,675 ft.

Galveston County

Sun Oil Co.'s No. 1 J. D. Hughes, 1,660.9 ft. NW line, 1,212 ft. NE line of W. M C. Baker Sur.
Drig. sand and shale 1,930 ft.; 13⅜-in. csg. at 1,505 ft.

Grimes County

Dr. Marshall et al's No. 1-B Todd, 300 ft. from E line and 175 ft. from N line of 150-ac. tract in extreme NW cor. of county (25 ft. N of No. 1).
Fishing 2,826 ft.

Harris County

A. C. Hill's No. 1-A Swilley 5,426 varas E of W line and 1,960 varas N of S line of Sur.-C. Victor Blanco Sur.
Rig up.

A. C. Hill's No. 1-B Swilley 6,141 varas E of W line, 1,960 varas N of S line of Sur., center of 200-ac. lease, 365 varas S of N line and 773 varas W of E line of lease, Victor Blanco Sur.
Drig. shale 1,900 ft.

E. E. Young, tr.'s No. 2 P. S. Griffith, 1,-476 ft. S of N line, 2,030 ft. E of W line of A. R. Bodman Sur.
S.D. 4,485 ft.; waiting on csg.

Hardin County

Frank Beaudoin et al's No. 1 Walton, A. L. Lancaster Sur.
S.D. 1,900 ft.

Houston County

A. H. Smith et al's No. 1 Smith Bros., S 55 deg., W 973 ft., S 35¾ deg., E 1,409 ft., J. H. Cummings League.
Abd. 1,801 ft.

Zeni Oil Co.'s No. 1 Houston County Timber Co., I.&G.N. Sur.
S.D. 5,612 ft.

Jackson County

L. A. Douglas' No. 1 I. N. Mitchel, 750 ft. W, 150 ft. N from NW cor. of A. F. Mitchell 100-ac. tract, Lolita area, S. F. Austin Sur.
Prepare to spud.

Jefferson County

Humble O. & R. Co.'s No. 1 R. C. Miller et al, 1,389 ft. S, 440 ft. W from NE cor. of Blk. No. 7, Garden Villas Subd., approx. 6,650 ft. WE line, 5,500 ft. NS line of survey, A. Savery Sur.
Drig. shale 5,485 ft.

Humble O. & R. Co.'s No. 1-B McFaddin, C. T. Cade Sur., 330 ft. from S and W lines of the E 240-ac. tract.
T.D. 6,094 ft.; drill stem stuck.

Sun Oil Co.'s No. 1 Herbert & Braussard, 6,390 ft. NW along SW line and 660 ft. NE at R/A to SW line, B. Blackman Sur., Abst. No. 2.
Shale 5,282 ft.; 9⅝-in. csg. 5,210 ft.; prepare to deepen.

Tatum and Pendergrass No. 1 B. W. Owens, 160 ft. E of W line and 225 ft. S of N line of Lot No. 3, Blk. 9, Range 9, Port Arthur Land Co. subdv., Joseph Grigsley Sur.
S.D. 997 ft.

Matagorda County

Continental Oil Co.'s No. 1 Feife, J. S Criswell Sur., 3,000 ft. E of W line, 2,-300 ft. N of S line of survey.
T.D. 7,485 ft.; 8⅝-in. csg.; getting ready to drill ahead.

Hammon Exploration Co.'s No. 1 Cleveland, 330 ft. NS line, and WE line of 68-ac. tract, E. Hall Sur.
T.D. 6,085 ft. in salt water sand; tested 18 stands salt water on D.S.T. from 5,988-6,017 ft.; coring ahead.

Heimerich & Payne's No. 1 Hawkins, 850 ft. S, 70 deg. W of Cockburn Oil Co.'s No. 6 Hawkins.
Drig. shale 6,660 ft.

Horace M. Smith, Inc.'s No. 1 Wadsworth ranch, 150 ft. out of S cor. of Lot No. 5, S. R. Fisher Sur.
T.D. 5,853 ft.; flowing from 4 to 5 bbls. per hour every 3 hrs.

Sterling O. & R. Co.'s No. 1 Baer Estate, 5,274 ft. SW of S cor. of Van Dorn and Bales Sur., 400 ft. NW at right angles in Samuel Hart Sur.
T. D. 1,320 ft.; 10¾-in. csg. set at 1,310 ft.; W.O.C.

Sun Oil Co.'s No. 1 Craig, 1,546.9 ft. SW from N cor. along NW line of lease and survey, thence 167.3 ft. SE at right angles in Thomas Williams Sur.
T.D. salt 708 ft.; reaming to set csg.

Montgomery County

W. C. Battaile's No. 1 Caswell, 2,490 ft. from E line, 150 ft. from S line of survey, David Davis Sur.
Rig up.

W. M. S. Thomson's No. 1 Scott, 1,191 ft. SN line, 482 ft. WE line, 1,623 ft. EW line of the F. A. B. Wheeler Sur.
T.D. 3,648 ft.; drilled 15 ft. of the cmt. plug and S.D.

Orange County

Blue Line Oil Co.'s No. 1 J. E. Peet Richard, 900 ft. W of E line and 150 ft. S of N line of most easterly NE cor. of 138-ac. tract, Bailey Sur.
Drlg. shale 2,148 ft.

Coker Oil Co.'s No. 1 S. T. Mansfield, 500 ft. S, 500 ft. W from NE cor. of 80-ac. tract, J. W. Hall Sur.
S.D. 1,280 ft.

Smith & Ellis' No. 1 Pell.
T.D. 2,095 ft.; changing rigs.

Polk County

Perry Morgan et al's No. 1 K. H. Root, L. Costillian Sur.
Shale 450 ft.; no report.

Refugio County

Cecil Hagen et al's No. 1 Edith Clarkson, 1,736 ft. from N line, 3,320 ft. from E line of J. Coughlin Sur.
Location.

San Jacinto County

Cockburn Oil Corp.'s No. 1 H. H. Lockin, 2,214 ft. W of E line, 295 ft. S of N line of H. H. Lockin 1,954-ac. tract, W. M. Hayes Sur.
Drlg. shale 3,637 ft.

Darby-Jones-McBee, Drlg. Co.'s No. 1 Bennett D. Beer Sur.
P.B. to 2,500 ft.

John Deering et al's No. 1 Randolph, 330 ft. S of center of N line of Tract 7 of the Randolph Sud., V. Flores Sur.
Location.

J. E. Hooper et al's No. 1 R. B. Love, 475 S of N line, 2,000 ft. W of E line, 177-ac. tract, Drury McGee Sur.
Rig up.

Trinity County

Boone Bros.' No. 1 A. Williamson, 250 ft. SN line and EW line of lease of 60-acre tract and survey, 10 miles N of Trinity, B.B.B.&C. Sur. A-111.
Rig up.

Victoria County

Heep Oil Corp.'s No. 1 J. J. Welder, 300 ft. SW line, 750 ft. from SE line of Nursery area, Phillip Graves Sur.
Drlg. water well.

Shell Pet. Corp.'s No. 2 McFadden, 11,250 ft. from NE cor. along N line, 2,310 ft. S of N line at R/A.
Drlg. shale 1,219 ft.

Welder Oil & Gas Co.'s No. 1 Patrick, 3,230 ft. SW, 1,925 ft. NW of most easterly cor. of 1,730-ac. tract, Felipe Demmit Sur.
Drlg. shale 2,000 ft.

Walker County

Bradley et al's No. 1 Trinity Lumber Co., N 45 deg., E 1,205 ft., N 45 deg., W 400 ft. from S cor. of J. C. Harrison 320-ac. Sur.
Location.

Wharton County

Pure Oil Co.'s No. 1 Paige, 1,397 ft. NE and 467 ft. SE from W cor. of 159.27-ac. lease, James Pirie Sur.
T.D. 6,359 ft.; reamed to 6,330 ft.

Sterling Oil & Ref. Co.'s No. 1 Frank Janik Sr., 1,859 ft. from N line, 467 ft. W from SE cor. of Janik tract, Johathan Scott Sur.
T.D. 8,667 ft.; 5-in. csg. at 7,831 ft.; P.B. to 7,875 ft.; killed well; preparing to squeeze out cmt. job.

Texas Co.'s No. 1-C Pierce Est., 12,225 ft. W along S line of the W. M. Pettus Sur., 3,400 ft. N in the John Caldwell League.
Drlg. shale 6,366 ft.

SOUTH LOUISIANA

Acadia Parish

Superior Oil Co.'s No. 1 Adam Smith, 334 ft. S, 35 deg. 35 min. E from NE cor. of 38.93-ac. tract, Sec. 47-7s-1e.
Drlg. sandy shale 4,296 ft.

Beauregard Parish

Richardson & Martin's No. 1 Southwest Lbr. Co.
Location.

Calcasieu Parish

Fred Oil Co.'s No. 2 Faist, 362 ft. E and 8 ft. S of NW cor. SE¼ Sec. 26-8s-10w.
S.D. 4,951 ft.

Lahay & Lambert et al's No. 1 Landry, 1,369 ft. southwesterly from NW cor., 8,600 ft. southwesterly from NE cor. of NW¼ of SE¼ of Sec. 23-11s-10w.
Rig up.

Wheeler Oil Corp.'s No. 1 School Lot, 1,703 ft. E, 1,325 ft. N of SW cor. Sec. 16-9s-7w.
S.D. 7,210 ft.

Cameron Parish

Magnolia Pet. Co.'s No. 1 J. B. Broussard, 330 ft. E and S, out of NW cor. of the SW¼ of SE¼ of Sec. 13-12s-9w.
T.D. 9,499 ft.; 5-in. csg. at 9,499 ft.; fishing.

Steinberger Pet. Co.'s No. 1 Drew, 330 ft. out of NW cor. NE¼ of Sec. 26-10s-11w.
Location.

Evangeline Parish

J. E. Ladue's No. 4 Vidrien, Sec. 34-3-3.
S.D. 1,635 ft.

Sparks-Mitchell and Jacobson's No. 1 Vidrine, 1,114 ft. S, 1,060 ft. W of NE cor. Sec. 47-4s-2e.
Shale 1,618 ft.; no report.

East Feliciana Parish

Thompson Creek Oil Co.'s No. 1 Fannie Noland, 2,600 ft. E and 1,580 ft. N of SW cor. Sec. 70.
S.D. 1,589 ft.

Iberia Parish

Jefferson Lake Oil Co.'s No. 1 State, Twp. 12s-5e.
T.D. 8,545 ft.; top of fish at 7,145 ft.; hole heaving.

Meade Oil Co.'s No. 1 Hamilton, near town of Loze, in the NW cor. of parish, Sec. 38-12-5.
S.D. 200 ft.

Texas Co.'s No. 1 State Fausse Point.
Drill stem stuck at 6,400 ft.; fishing.

Jefferson Davis Parish

J. K. Lewis' No. 1 Lockmoore, 150 ft. N and W of SE cor. NW¼ of Sec. 32-7-6.
Drlg. shale 1,305 ft.

Shell Pet. Corp.'s No. 1 Lacassan, 990 ft. N, 1,980 ft. E of SW cor. of Sec. 20-11s. 5w.
Coring 7,006 ft.

LaFourche Parish

Coastal Oil Co.'s No. 2 Constantine, 1,476 ft. N, 809 ft. E of SW cor. Sec. 36-21-22e.
Location.

St. Bernard Parish

F. F. Kramer's No. 1 Robinson, 200 ft. S, 200 ft. W of NE cor. of Sec. 78-14s-14e.
T.D. 100 ft.; reported slight gas show, shut down.

Emerald Pet. Corp.'s "Shell Beach Properties" No. 1, on S edge of Bayou Louis. Sec. 31-13s-15e.
T.D. 7,385 ft.; hole caved in while S.D. at 5,480 ft.; cemented 7-in. csg. at 5,480 ft.

St. Mary Parish

Herton Oil Co.'s No. 1 Roame, 1,386 ft. N, 688 ft. E, SW cor. of Lot 13, Sec. 38-13s-9e.
Drlg. shale and lime 5,610 ft.

St. Martin Parish

Texas Co.'s No. 1 State Lake, 5,180 ft. E, 350 ft. N of SW cor. of Sec. 10-10s-9e.
T.D. 5,835 ft.; electrical coring test from 5,811-35 ft.; showed 20 ohms. resistance.

Tide Water Oil Co.'s No. 2 Smedes, 1,650 ft. S, 1,650 ft. W of NW cor. of Smedes tract, Sec. 57-11s-6e.
Bldg. roadway.

Tide Water Oil Co.'s No. 1 Smedes, 990 ft. from N and E lines of 1,000-ac. tract, Sec. 57-11s-6w.
T.D. 5,582 ft.; I.P. 11 bbls. per hour, ¾-in. choke; T.P. 1,890 lbs.; C.P. 2,100 lbs.

Plaquemines Parish

Lo-Tex Expltn. Co.'s No. 1 Hero Plantation. Sec. 72-14s-24e.
5,343 ft.; fishing at 1,827 ft.

Southern Sulphur Co.'s No. 1 Manhattan Fruit Co.
Drlg. shale 3,052 ft.

Rapides Parish

Amerada Pet. Corp.'s No. 1 Wells Land Co., 490 ft. from W line, 2,460 ft. from S line of Sec. 53-1s-3e.
T.D. 6,837 ft.; P.B. to 5,725 ft.; perforated csg. with 10 holes from 5,705-10 ft.; started flowing; killed well.

St. Tammy Parish

Danciger O. & R. Co.'s No. 1 Holdsworth, C NW¼ SE¼ Sec. 26-8s-14e.
Drlg. sandy shale 2,515 ft.

Vermillion Parish

Delcambre & Shelton's No. 1 Adam Delcambre, south degrees E, 825 ft. from most northerly cor. of irregular Sec. 63-17-5.
Drlg. shale 2,704 ft.

Terrebonne Parish

Dulac Oil Co.'s No. 1 Bourg, Sec. 14-20-17e.
S.D. 4,072 ft.

Shell Pet. Corp.'s No. 1 Realty Operators, 2,000 ft. due S of E cor. of triangular Sec. 76, Sur. 103, 17s-17e.
S.D.; shale 2,488 ft.

Legal

The Secretary of the Interior, Washington. Advertisement—Call for Bids To Purchase Royalty Oil and Royalty Gasoline Accruing to the United States from the Salt Creek, Wyoming, Oil Field. Sealed proposals, in duplicate, will be received in the office of the Secretary of the Interior, Washington, D. C., on or before noon December 2, 1935, from responsible bidders for the purchase, beginning January 1, 1936, of royalty oil and royalty natural or casinghead gasoline accruing to the United States from Government lands in the Salt Creek, Wyoming, oil field. Detailed specifications on quantities offered for sale, required form of bids, deliveries, volume measurements, gravity determinations, bond requirements, and action on bids, should be obtained by prospective bidders from the Director, Geological Survey, Department of the Interior, Washington, D. C., the Supervisor, U. S. Geological Survey, Casper, Wyoming, or the Register, U. S. Land Office, Cheyenne, Wyoming. Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., pursuant to the specifications, the envelope to be marked plainly "Bid on Salt Creek Royalty Oil (Gasoline)." No bid received after the time herein fixed for submitting bids will be considered. (Sgd.) Harold L. Ickes, Secretary of the Interior. Nov. 1, 1935.

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Shell Oil Co., No. 10 Capitan, Santa Barbara Co.	5- 4-30	....	location
General Petroleum, No. 15 Capitan, Santa Barbara Co.	32- 5-30	323	suspended
Shell Oil Co., No. 2 Goleta, Santa Barbara Co.	10- 4-29	3,583	sd. sh. drlg.
Honolulu Oil Corp., No. 9 Elwood, Santa Barbara Co.	tideland	4,549	form. test
Barnsdall-Rio Grande, No. 12 Elwood, Santa Barbara	15- 4-29	6,703	redrlg. 4,935
Barnsdall-Rio Grande, No. 6 Elwood, Santa Barbara.	15- 4-29	3,481	P.B. 2,650
Barnsdall-Rio Grande, No. 2 Elwood, Santa Barbara.	15- 4-29	6,492	P.B. 5,836
Bankline Oil Co., No. 10 Elwood, Santa Barbara Co.	tideland	3,385	sd. sh. drlg.
Pacific Western, No. 16 Elwood, Santa Barbara Co.	tideland	3,095	sd. sh. drlg.
Spalding, Caroline, No. 13 Elwood, Santa Barbara Co.	tideland	....	bldg. fdn.
Field, O. C., No. 1 Santa Maria, Santa Barbara Co.	28-10-33	2,584	sd. sh. drlg.
Freeman, M. J., No. 1 Purisima, Santa Barbara Co.	11- 7-33	1,450	suspended
Mar Monte Oil Co., No. 1 Summerland, Santa Barbara	16- 4-26	1,040	sd. sh. drlg.
Santa Barbara Oil, No. 1 Carpinteria, Santa Barbara	29- 4-25	565	sd. sh. drlg.
Dietzman, Julius, No. 1 Carpinteria, Santa Barbara Co.	8- 4-25	....	rigged up
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	8,116	P.B. 6,400
Union Oil Co., No. 1 Bardsdale, Ventura Co.	12- 3-20	6,242	will redrl.
Monticello Oil Co., No. 1 Bardsdale, Ventura Co.	12- 3-20	4,011	suspended
Duke Oil Co., No. 1 Bardsdale, Ventura Co.	7- 3-19	....	material
The Texas Co., No. 1 Fillmore, Ventura Co.	29- 4-19	5,400	hd. sd. drlg.
Laying & Jacobs, No. 1 Shields Canyon, Ventura Co.	32- 4-19	1,006	suspended
El Rancho Oil Co., No. 1 South Mountain, Ventura Co.	9- 3-19	1,110	suspended
Bankline Oil Co., No. 1 South Mountain, Ventura Co.	3- 3-19	3,634	flow. 490 b.d.
Bankline Oil Co., No. 2 South Mountain, Ventura Co.	3- 3-19	....	bldg. rig
Hull, James, No. 1 Susana, Ventura Co.	2- 2-18	1,150	cleaning out
Bolsa Chica Oil Co., No. 1 Temescal, Ventura Co.	4- 4-18	2,760	O.S. drlg.
Ventura Expl. Co., No. 1 Saticoy, Ventura Co.	30- 3-22	7,068	cleaning out
Prop. Service Corp., No. 1 Lloyd, Ventura Co.	24- 3-23	8,582	P.B. 9,528
General Pet., No. 1 Oxnard, Ventura Co.	26- 2-23	7,625	redrlg. 5,829
General Pet., No. 3 Rincon, Ventura Co.	tideland	1,394	sd. sh. drlg.
Honolulu Oil Corp., No. 2 Rincon, Ventura Co.	tideland	2,273	sd. sh. drlg.
Continental Oil Co., No. 2 Ojai, Ventura Co.	13- 4-23	....	bldg. rig
Continental Oil Co., No. 5 San Miguelito, Ventura Co.	15- 3-24	947	sd. sh. drlg.
C. C. M. Oil Co., No. 1 San Miguelito, Ventura Co.	23- 3-24	7,906	P.B. 7,550
Standard Oil Co., No. 1 Lost Hills, Kern Co.	2-26-20	5,824	recmtd. 5,766
Cumberland Oil Co., No. 1 Devil's Den, Kern Co.	17-26-18	3,540	suspended
Belmac Drlg. Co., No. 1 McKittrick, Kern Co.	22-29-21	4,374	hd. sd. drlg.
Belmac Drlg. Co., No. 2 McKittrick, Kern Co.	21-29-21	408	sd. sh. drlg.
Bering, R. E., No. 1 McDonald, Kern Co.	12-28-19	1,000	sd. sh. drlg.
General Pet. Co., No. 1 South Belridge, Kern Co.	30-28-21	11,377	suspended
Standard Oil Co., No. 3 North Belridge, Kern Co.	36-27-20	7,641	br. sh. drlg.

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Standard Oil Co., No. 4 North Belridge, Kern Co. ...	36-27-20	....	location
Belridge Oil Co., No. 33-35 North Belridge, Kern Co.	35-27-20	5,098	O.S. drlg.
Belridge Oil Co., No. 48-35 North Belridge, Kern Co.	35-27-20	4,251	sd. sh. drlg.
Continental Oil Co., No. 6 North Belridge, Kern Co.	36-27-20	7,700	hd. sh. drlg.
Union Oil Co., No. 19 North Belridge, Kern Co.	36-27-20	5,360	flow 1,250 b.d.
Union Oil Co., No. 20 North Belridge, Kern Co.	36-27-20	5,321	cleaning out
Beck, Albert, No. 1 North Belridge, Kern Co.	25-28-20	186	sd. sh. drlg.
Ohio Oil Co., No. 1 Maricopa Flats, Kern Co.	11-11-22	6,397	sd. sh. drlg.
Woods & Bailey, No. 1 McFarland, Kern Co.	16-26-26	2,490	suspended
Standard Oil Co., No. 1 Delano, Kern Co.	1-25-23	2,455	gas; shut in
Standard Oil Co., No. 2 Delano, Kern Co.	1-25-23	3,256	gas; shut in
Standard Oil Co., No. 4 Delano, Kern Co.	34-24-23	2,460	gas; shut in
Standard Oil Co., No. 5 Delano, Tulare Co.	33-24-23	2,466	gas; shut in
Trico Oil & Gas Co., No. 1 Delano, Kern Co.	3-25-23	2,525	gas; shut in
Trico Oil & Gas Co., No. 3 Delano, Kern Co.	35-24-23	4,835	dry; abd.
Trico Oil & Gas Co., No. 5 Delano, Kern Co.	3-25-23	2,467	gas; shut in
Richardson & Heaston, No. 1 Kern Front, Kern Co....	5-28-28	2,567	suspended
McDonald & Deavin, No. 1 Kern Front, Kern Co. ...	10-28-27	231	suspended
National Oil Co., No. 2 Kern Front, Kern Co.	11-28-27	1,595	sd. sh. drlg.
Associated Oil Co., No. 6 Kern Front, Kern Co.	4-28-27	....	rigged up
Oil Factors, Inc., No. 1 Kern Front, Kern Co.	6-28-27	....	rigging up
C. C. M. Oil Co., No. 9 Kern Front, Kern Co.	23-28-27	1,763	sd. sh. drlg.
C. C. M. Oil Co., No. 10 Kern Front, Kern Co.	23-28-27	....	rig; suspended
C. C. M. Oil Co., No. 11 Kern Front, Kern Co.	23-28-27	....	location
Kreighs, C. H., No. 1 Kern Front, Kern Co.	4-28-27	2,457	sd. sh. drlg.
Republic Petroleum, No. 5 Kern Front, Kern Co. ...	24-28-27	2,162	cleaning out
Standard Oil Co., No. 5 Kern Front, Kern Co.	5-28-27	2,821	pump. 104 b.d.
Standard Oil Co., No. 6 Kern Front, Kern Co.	5-28-27	2,653	sd. sh. drlg.
Standard Oil Co., No. 7 Kern Front, Kern Co.	5-28-27	....	bldg. rig
Standard Oil Co., No. 8 Kern Front, Kern Co.	24-28-27	....	location
The Texas Co., No. 1 Kern Front, Kern Co.	23-28-27	791	sd. sh. drlg.
American Naphtha Oil Co., No. 1 Kern Front, Kern Co.	31-28-28	1,365	P.B. 1,105
Aladdin Oil Co., No. 1 Mountain View, Kern Co. ...	19-30-29	....	location
Barnsdall Oil Co., No. 5 Mountain View, Kern Co. ...	23-30-29	2,763	sd. sh. drlg.
Barsdall Oil Co., No. 6 Mountain View, Kern Co. ...	30-30-29	3,841	sd. sh. drlg.
Gilmore-Snyder, No. 2 Mountain View, Kern Co.	24-30-28	5,411	flow. 1,050 b.d.
Gilmore-Snyder, No. 3 Mountain View, Kern Co.	24-30-28	....	bldg. rig
Canal Oil Co., No. 1 Mountain View, Kern Co.	30-30-29	5,810	cmt. fish
Union Oil Co., No. 10 Mountain View, Kern Co.	23-30-28	4,631	sd. sh. drlg.
Hancock Oil Co., No. 8 Mountain View, Kern Co. ...	14-30-28	5,096	redrlg. 4,965
Hancock Oil Co., No. 9 Mountain View, Kern Co. ...	14-30-28	....	rig; suspended
Hogan Pet. Co., No. 7 Mountain View, Kern Co. ...	4-31-29	5,910	P.B. 5,850
Hogan Pet. Co., No. 8 Mountain View, Kern Co. ...	32-30-29	3,505	sd. sh. drlg.
Buffalo Oil Co., No. 1 Mountain View, Kern Co.	19-30-29	....	rig; suspended
Vesta Pet. Co., No. 2 Mountain View, Kern Co.	19-30-29	....	bldg. rig
Wood-Callahan Oil Co., No. 1 Mountain View, Kern Co.	30-30-29	5,680	cleaning out
O'Kane & Brain, No. 2 Mountain View, Kern Co. ...	30-30-29	....	rig; suspended
Mohawk Oil Co., No. 14 Mountain View, Kern Co. ...	30-30-29	5,890	O.S. drlg.
Mohawk Oil Co., No. 15 Mountain View, Kern Co. ...	30-30-29	5,140	sd. sh. drlg.
Mohawk Oil Co., No. 16 Mountain View, Kern Co. ...	30-30-29	....	rigging up
Ohio Oil Co., No. 1 Mountain View, Kern Co.	13-30-28	5,999	redrlg. 4,931
Shell Oil Co., No. 5 Mountain View, Kern Co.	32-30-29	5,672	sd. sh. drlg.
Standard Oil Co., No. 13 Mountain View, Kern Co. ...	23-30-28	5,565	suspended
Standard Oil Co., No. 14 Mountain View, Kern Co. ...	24-30-28	5,380	flow. 450 b.d.
Standard Oil Co., No. 15 Mountain View, Kern Co. ...	13-30-28	4,750	sd. sh. drlg.
Standard Oil Co., No. 16 Mountain View, Kern Co. ...	13-30-28	3,682	sd. sh. drlg.
Standard Oil Co., No. 17 Mountain View, Kern Co. ...	24-30-28	5,168	sd. sh. drlg.
Standard Oil Co., No. 18 Mountain View, Kern Co. ...	24-30-28	4,782	sd. sh. drlg.
Standard Oil Co., No. 19 Mountain View, Kern Co. ...	24-30-28	1,672	sd. sh. drlg.
Treasure Oil Co., No. 1 Mountain View, Kern Co.	12-30-28	....	bldg. rig
Mountain View Oil Co., No. 1 Mountain View, Kern Co.	25-30-28	5,650	redrlg. 5,475
Jergins Trust, No. 5 Mountain View, Kern Co.	24-30-28	5,761	redrlg. 5,687
Jergins Trust, No. 6 Mountain View, Kern Co.	30-30-29	5,072	sd. sh. drlg.
United Expl. Co., No. 1 Bakersfield, Kern Co.	22-30-27	2,754	suspended
Standard Oil Co., No. 1 Round Mountain, Kern Co. ...	3-29-29	2,472	sd. sh. drlg.
Jergins Trust, No. 12 Edison, Kern Co.	13-30-29	1,352	cmtd. 885
Jergins Trust, No. 13 Edison, Kern Co.	13-30-29	1,555	cmtd. 1,175
Jergins Trust, No. 14 Edison, Kern Co.	13-30-29	....	bldg. fdn.
Shell Oil Co., No. 8 Edison, Kern Co.	16-30-29	3,101	will dpn.
Shell Oil Co., No. 9 Edison, Kern Co.	15-30-29	2,074	sd. sh. drlg.
Shell Oil Co., No. 10 Edison, Kern Co.	14-30-29	1,560	sd. sh. drlg.
Rogers & Osborne, No. 1 Edison, Kern Co.	19-30-30	1,251	sd. sh. drlg.
General Pet., No. 10 Edison, Kern Co.	24-30-29	....	rig; suspended
General Pet., No. 11 Edison, Kern Co.	10-30-29	1,895	cmtd. 1,735
General Pet., No. 12 Edison, Kern Co.	24-30-29	....	bldg. rig
Appling, C. E., No. 1 Edison, Kern Co.	4-30-29	3,690	P.B. 3,625
Bauer, J. H., No. 1 Edison, Kern Co.	21-30-29	4,554	P.B. 2,972
Seepie, J. C., No. 1 Elk Hills, Kern Co.	5-30-24	5,265	suspended
Hutcheson & Osborne, No. 2 Arvin, Kern Co.	32-30-30	1,330	gr. sd. drlg.
Arlington Prop., No. 1 Buttonwillow, Kern Co.	6-28-23	2,235	gas; shut in
Milham Exploration Co., No. 5 Buttonwillow, Kern Co.	5-28-23	2,127	gas; shut in
The Texas Co., No. 1 Buttonwillow, Kern Co.	6-28-23	2,435	gas; shut in
The Texas Co., No. 2 Buttonwillow, Kern Co.	6-28-23	2,475	gas; shut in
Superior Oil Co., No. 1 Semi-Tropic, Kern Co.	22-27-23	2,418	gas; shut in
Superior Oil Co., No. 2 Semi-Tropic, Kern Co.	34-27-24	5,695	sd. sh. drlg.
Fullerton Oil Co., No. 1 Semi-Tropic, Kern Co.	1-27-22	2,391	gas; shut in
Fullerton Oil Co., No. 2 Semi-Tropic, Kern Co.	14-27-23	2,463	gas; shut in
Fullerton Oil Co., No. 3 Semi-Tropic, Kern Co.	9-27-23	2,150	gas; shut in
Fullerton Oil Co., No. 4 Semi-Tropic, Kern Co.	26-27-23	2,395	gas; shut in
Fullerton Oil Co., No. 5 Semi-Tropic, Kern Co.	8-27-23	2,347	gas; shut in
Fullerton Oil Co., No. 6 Semi-Tropic, Kern Co.	25-27-23	2,441	gas; shut in
Fullerton Oil Co., No. 7 Semi-Tropic, Kern Co.	25-27-23	2,437	gas; shut in
Fullerton Oil Co., No. 8 Semi-Tropic, Kern Co.	25-27-23	2,429	gas; shut in
Fullerton Oil Co., No. 9 Semi-Tropic, Kern Co.	26-27-23	2,431	gas; shut in
Fullerton Oil Co., No. 10 Semi-Tropic, Kern Co.	15-27-22	2,414	gas; shut in
Standard Oil Co., No. 1 Semi-Tropic, Kern Co.	8-27-23	2,200	gas; shut in
Standard Oil Co., No. 3 Semi-Tropic, Kern Co.	7-27-23	2,355	gas; shut in
Standard Oil Co., No. 4 Semi-Tropic, Kern Co.	9-27-23	4,578	dry; abd.
Standard Oil Co., No. 6 Semi-Tropic, Kern Co.	8-27-23	2,351	gas; shut in
Standard Oil Co., No. 8 Semi-Tropic, Kern Co.	12-27-22	2,426	gas; shut in
Standard Oil Co., No. 9 Semi-Tropic, Kern Co.	1-27-23	....	location
Standard Oil Co., No. 11 Semi-Tropic, Kern Co.	20-27-24	4,720	sd. sh. drlg.
Standard Oil Co., No. 12 Semi-Tropic, Kern Co.	30-27-24	4,421	br. sd. drlg.
Standard Oil Co., No. 13 Semi-Tropic, Kern Co.	6-27-23	2,408	gas; shut in
Standard Oil Co., No. 14 Semi-Tropic, Kern Co.	36-27-23	1,183	sd. sh. drlg.
Standard Oil Co., No. 15 Semi-Tropic, Kern Co.	16-27-23	2,215	gas; shut in
Standard Oil Co., No. 17 Semi-Tropic, Kern Co.	16-27-23	2,951	gas; shut in
Milham Expl. Co., No. 1 Semi-Tropic, Kern Co.	15-27-23	2,122	gas; shut in
Milham Expl. Co., No. 2 Semi-Tropic, Kern Co.	15-27-23	2,429	gas; shut in
Milham Expl. Co., No. 3 Semi-Tropic, Kern Co.	15-27-23	2,345	gas; shut in
Milham Expl. Co., No. 4 Semi-Tropic, Kern Co.	24-27-23	2,486	gas; shut in
Comanche Oil Co., No. 1 Comanche, Kern Co.	15-32-29	5,231	sd. sh. drlg.
Tejon Ridge Oil Co., No. 1 Comanche, Kern Co.	23-32-29	2,187	suspended
Shell Oil Co., No. 1 Buena Vista, Kern Co.	9-32-25	9,453	P.B. 5,883
Ohio Oil Co., No. 1 Buena Vista, Kern Co.	31-31-26	5,302	gas; shut in
Ohio Oil Co., No. 3 Buena Vista, Kern Co.	31-31-26	5,453	sd. sh. drlg.
Silver Gate Oil & Gas Co., No. 1 Tejon, Kern Co. ...	7-10-19	3,050	gr. sd. drlg.
Reserve Oil & Gas Co., No. 4 Tejon, Kern Co.	2-10-19	....	bldg. rig
Pacific Expl. Co., No. 1 Kreyenhagen, Fresno Co. ...	17-21-17	1,500	Schist; susp.
Union Oil Co., No. 1 Lillis-Welsh, Fresno Co.	24-21-14	10,944	redrlg. 10,300
K. N. D. A., No. 54 Kettleman North, Fresno Co. ...	24-21-16	8,360	testing out
Standard Oil Co., No. 2 Kettleman Middle, Kings Co.	29-22-19	7,885	fishing
Pet. Sec., No. 1 Kettleman Middle, Kings Co.	30-22-19	8,697	br. sh. drlg.
Farrel Pet., Well No. 1, San Luis Obispo Co.	19-31-12	1,924	sd. sh. drlg.
Birch-Royer Oil Co., No. 1 Pismo, San Luis Obispo Co.	33-31-13	606	sd. sh. drlg.
United Oil Co., Well No. 1, San Luis Obispo Co.	2-32-21	....	bldg. rig
Willett Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-26-15	2,687	recmtd.
Milham Expl. Co., No. 1 Tulare Lake, Kings Co. ...	5-22-19	2,784	sd. sh. drlg.
Commonwealth Consd. Gas, No. 1 Tulare Lake, Kings	21-22-20	2,490	gas; shut in
Commonwealth Consd. Gas, No. 2 Tulare Lake, Kings	21-22-20	1,400	sd. sh. drlg.
Dudley Ridge Dev. Co., No. 1 Dudley Ridge, Kings Co.	24-22-20	1,300	suspended
Amerada Pet., No. 1 F. L. D., San Joaquin Co.	15- 2-5	8,970	hd. sh. drlg.
Amerada Pet., No. 2 F. L. D., San Joaquin Co.	15- 2-5	6,863	producing gas
Amerada Pet., No. 3 F. L. D., San Joaquin Co.	22- 2-5	6,040	gas; shut in
Amerada Pet., No. 4 F. L. D., San Joaquin Co.	22- 2-5	....	bldg. rig
Pure Oil Co., No. 1 Chowchilla, Madera Co.	7-10-14	3,482	gas; shut in
Pure Oil Co., No. 2 Chowchilla, Madera Co.	8-10-14	3,170	sd. sh. drlg.
Pure Oil Co., No. 3 Chowchilla, Madera Co.	6-10-14	....	rigging up
Northern Counties Pet., No. 1 Tehama, Tehama Co....	25-24-3	5,031	recmtd. 4,904
Shell Oil Co., No. 1 Branch, Monterey Co.	24-24-10	6,163	sd. sh. drlg.
Clark, George, No. 1 Ducor, Tulare Co.	21-23-28	1,260	hd. sd. drlg.
Buttes Oilfields, Well No. 3, Sutter Co.	11-15-1	5,340	recmtd. 4,944

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Larco Oil Co., No. 1 El Segundo, Los Angeles Co. ...	12- 3-15	7,600	cmt. whipst'ck
Sovereign Oil Co., No. 1 El Segundo, Los Angeles Co.	22- 3-14	7,384	sd. sh. drlg.
Pioneer Holding Co., No. 1 El Segundo, Los Angeles	33- 3-14	4,241	sd. sh. drlg.
Clark, T. R., No. 1 El Segundo, Los Angeles Co.	6- 4-14	....	rig; suspended
Shell Oil Co., No. 1 Long Beach, Los Angeles Co. ...	13- 4-13	2,760	sd. sh. drlg.
Standard Oil Co., No. 10 Inglewood Deep, Los Angeles	8- 2-14	3,950	flow. 491 b.d.
Standard Oil Co., No. 11 Inglewood Deep, Los Angeles	8- 2-14	3,122	flow. 605 b.d.
Blackline Oil Co., No. 1 Del Rey, Los Angeles Co. ...	27- 2-15	6,634	redrlg. 6,468
Crest Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,703	P.B. 6,673
Mathews Pet. Co., No. 1 Del Rey, Los Angeles Co. ...	27- 2-15	6,543	suspended
Birch-Royer Oil Co., No. 1 Del Rey, Los Angeles Co.	34- 2-15	6,555	hd. sd. drlg.
Joyce Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,742	P.B. 6,675
Anglo American Oil Co., No. 1 Del Rey, Los Angeles	27- 2-15	6,905	hd. sh. drlg.
Union Oil Co., No. 18 Del Rey, Los Angeles Co.	27- 2-15	....	bldg. rig
Treasure Oil Co., No. 1 Del Rey, Los Angeles Co. ...	27- 2-15	6,157	suspended
Yant Pet. Corp., No. 1 Newhall, Los Angeles Co. ...	1- 3-16	385	sd. sh. drlg.
Dabney Pet. Co., No. 1 Malibu, Los Angeles Co.	5- 2-18	65	tech. spud.
Vanco Dev. Co., No. 1 Artesia, Los Angeles Co.	25- 3-12	5,817	suspended
Eyer Pet. Co., No. 1 Torrance, Los Angeles Co.	20- 4-13	1,410	sd. sh. drlg.
Monarch Oil Corp., No. 1 Topanga, Los Angeles Co.	5- 1-16	652	cleaning out
Standard Oil Co., No. 78 Montebello, Los Angeles Co.	2- 2-12	3,835	rig. to pump
Signal Oil Co., No. 1 Montebello, Los Angeles Co. ...	4- 2-11	3,172	hd. sd. drlg.
Woodward Oil Co., No. 2 Montebello, Los Angeles Co.	4- 2-11	....	rigging up
The Texas Co., No. 1 Montebello, Los Angeles Co. ...	5- 2-11	7,275	fish. D.P.
The Texas Co., No. 2 Montebello, Los Angeles Co. ...	5- 2-11	5,781	recmtd. 5,363
Universal Consd., No. 3 Montebello, Los Angeles Co.	5- 2-11	6,600	cmtd. 6,530
St. Helens Pet. Co., No. 2 Montebello, Los Angeles Co.	5- 2-11	....	location
Wilshire Oil Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	5,971	cleaning out
Wilshire Oil Co., No. 2 Montebello, Los Angeles Co.	4- 2-11	3,981	suspended
Wilshire Oil Co., No. 3 Montebello, Los Angeles Co.	11- 2-11	3,630	sd. sh. drlg.
North American, No. 1 Montebello, Los Angeles Co.	30- 1-10	4,297	sd. sh. drlg.
Hillman & Long, No. 1 Montebello, Los Angeles Co.	28- 1-11	3,791	sd. sh. drlg.
Frontier Oil Co., No. 1 Pico, Los Angeles Co.	7- 2-11	5,246	suspended
Oil & Gas Associates, No. 1 Pico, Los Angeles Co. ...	9- 2-11	3,000	hd. sh. drlg.
Pressel & Tull, No. 1 Puente, Los Angeles Co.	30- 2-9	4,535	suspended
Fraser, N. M., No. 1 Saugus, Los Angeles Co.	31- 4-16	853	fishing
International Oil Dev., No. 1 Saugus, Los Angeles Co.	34- 5-16	1,485	sd. sh. drlg.
Great Coastal Oil Co., No. 1 Elsinore, Riverside Co....	36- 5-5	1,550	sd. sh. drlg.
Domain Dev. Co., No. 1 Trabuco, Orange Co.	3- 6-7	1,086	suspended
Continental Oil Co., No. 1 Santa Ana, Orange Co. ...	14- 5-10	4,411	dry; abd.
Leaseholders Dev. Co., No. 1 Atwood, Orange Co.	26- 3-9	4,040	suspended
Cook, T. A., No. 1 Richfield, Orange Co.	36- 3-9	....	rig; suspended
Standard Oil Co., No. 1 Richfield, Orange Co.	36- 3-9	2,571	sd. sh. drlg.
Viking Oil Co., No. 1 Richfield, Orange Co.	29- 3-9	4,783	suspended
Hillman & Long, No. 1 San Juan, San Bernardino Co.	2- 3-8	2,418	suspended
Tehama Pet. Co., No. 1 Chino, San Bernardino Co. ...	33- 2-8	3,068	fishing

LA.-ARK. WILDCATS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

Bienville Parish

DeSoto O. & G. Co.'s No. 1 C. R. Mower, 270 ft. S, 400 ft. W, NE cor. NW SW sec. 9-16-10.
Derrick.

Bossier Parish

Ark.-La. Gas Co.'s No. 1-B Werner, 1,258 ft. N, 624 ft. E, SW cor. SE SE Sec. 7-17-11.
Drlg. 2,615 ft.

Bossier O. & G. Co.'s No. 3 Sherrill, 330 ft. N and W, SE cor. Sec. 13-19-12.
S.D. 2,190 ft.

Geo. H. Bringhurst et al's No. 1 Buckley, NE SW sec. 36-21-13.
Rigging up.

Premier Investment Co.'s No. 2 Larkin, 660 ft. N and 150 ft. E SW cor. Sec. 14-19-11.
Set 8-in. 94 ft.; set 6-in. 384 ft.; W.O. S.R. 406 ft.

Producers O. & G. Co.'s No. 1 Pettitt, 330 ft. S and W, NE cor. NW Sec. 17-17-11.
Drlg. 3,646 ft.

Producers O. & G. Co.'s No. 1 Edwards. 660 ft. N and W, SE cor. Sec. 27-18-11.
S.D. for fuel 860 ft.

Triangle Drlg. Co.'s No. 2 Skannal, Unit 50, S and W of C of NE.
Drlg. 2,557 ft.

Caddo Parish

J. Ed Bailey, tr.'s No. 1 Hartzo, NW cor. NE NW Sec. 28-22-16.
S.D. 1,236 ft.

John D. Bialock's No. 2-A Seybert, 270 ft. N and 330 ft. E of C Sec. 17-20-15.
S.D. 1,500 ft.

J. M. Collins' No. 1 fee, 2,043 ft. N, 394 ft. E, SW cor. Sec. 4-20-15.
W.O.S.R. 2,200 ft.

The Hunter Co.'s No. 1 fee, 330 ft. N and E SW cor. SW SE Sec. 17-19-14.
Dry and abd. 2,435 ft.

F. D. Hyde's No. 1 Thigpen & Herold, 350 ft. S and E. C Sec. 5-15-15.
Drlg. 2,035 ft.

Max Brandt's No. 1 Hughes, SW cor. NE NW Sec. 15-20-15.
Tested 500,000 ft. gas; S.D.; W.O. 2,206 ft.

Poindexter & Tucker's No. 4 Levy, SW cor. SE NE Sec. 16-20-15.
Set 10-in. 55 ft.; set 6-in. 2,178 ft.

Puritan Oil Co.'s No. 1 Land, 550 ft. E, 250 ft. N, SW cor. Sec. 4-20-15.
W.O.S.R. 2,181 ft.

Shreveport Oil Corp.'s No. 7-B Muslow, 495 ft. N, 1,320 ft. E, SW cor. Sec. 4-20-15.
Set 6¼-in. 2,140 ft.

Shreveport Oil Corp.'s No. 2-G Muslow, 780 ft. S, 578 ft. W, NE cor. NW Sec. 9-20-15.
W.O.S.R. 2,185 ft.

Ty-Stan, Inc.'s No. 1 Jolly, 400 ft. S and E, NW cor. SW SW Sec. 22-22-15.
S.D. 2,320 ft.

Caldwell Parish

Caldwell Drlg. Co.'s No. 2 Gore, 280 ft. S, 600 ft. W, NE cor. SE Sec. 30-12-3e.
S.D.; W.O. 768 ft.

Critchett & Woods' No. 1 Kyles, NE cor. SW NE Sec. 18-11-3e.
Set 8-in. 400 ft.; T.D. 1,740 ft.

G. W. Zeigan et al's No. 1 La.-Central Lbr. Co., 175 ft. S and E, NW cor. SW SW Sec. 35-13-3e.
S.D. 1,200 ft.

Catahoula Parish

McIntyre et al's No. 1 Tensas, 1,740 ft. S, 990 ft. E, NW cor. Sec. 18-10-4e.
No test at 2,810 ft.; drlg. 2,920 ft.

Claiborne Parish

E. T. Oakes' No. 1 H. W. Patton Est., 660 ft. S and W, NE cor. Sec. 1-20-5w.
S.D. for repairs, 4,135 ft.

Ryan Oil Corp.'s No. 1 F. A. Gladney, 660 ft. S, 330 ft. E, NW cor. SE Sec. 10-23-16. Sec. 27-20-7.
Drlg. 4,114 ft.

United Gas Public Service Co.'s No. 2 Durrett, 660 ft. N and 1,980 ft. E, SW cor. Sec. 31-20-5.
Set 13⅜-in. 696 ft.

De Soto Parish

E. B. Bird et al's No. 1 J. H. Johns, 330 ft. N and W, C Sec. 20-14-6.
Tested S.W. 2,622 ft., S.D.W.O.

Century Drlg. Co.'s No. 1 D. Bailey, 440 ft. S and W C Sec. 25-11-14.
Testing Nacatoch 1,140 ft.; T.D. 3,004 ft.

Sam Goldman's No. 1 G. R. Stell, 330 ft. S and W, NE cor. Sec. 5-12-16.
S.D. 200 ft.

Jai Drlg. Co.'s No. 1-A Scales, 330 ft. N and E, SW cor. SE SE Sec. 35-13-13.
Comp.; pumping 96 bbls., 2,415 ft.

C. T. Ruffin's No. 2 Lee, 150 ft. N, 660 ft. E, SW cor. NW SW Sec. 33-14-13.
W.O.S.R. 2,843 ft.

Ed Saffold et al's No. 1 Thigpen, Sec. 33-13-13.
O.W.D.D.; S.D. 1,940 ft.

Union Pet. Co.'s No. 1 Hill, Sec. 3-10-13.
Drlg. 1,940 ft.

Grant Parish

Alexander et al's No. 1 Maxwell, Sec. 9-9-1e.
S.D. 1,220 ft.

Lincoln Parish

Caldwell Land & Timber Co.'s No. 1 J. K. Hammons, 330 ft. S and E, NW cor. SE SW Sec. 30-18-1w.
Derrick.

Herman L. Brown's No. 1 Monstead, 1,320 ft. S, 660 ft. E of C Sec. 10-17-4w.
Set 7-in. 5,270 ft.; T.D. 5,301 ft.

Madison Parish

Southern Land & Exploration Co.'s No. 1 Delta Land Co., Sec. 1-17-12e.
Set 8⅝-in. 2,106 ft.; T.D. 2,207 ft.

Morehouse Parish

United Gas Public Service Co.'s No. 31 Crossett, 1,320 ft. S, 660 ft. E, SW cor. Sec. 15-21-4e.
Rigging up.

United Gas Public Service Co.'s No. 16 Tensas, 1,320 ft. N, 660 ft. E, SW cor. Sec. 10-21-4e.
Comp.; 5,000,000 ft. gas, 2,158 ft.

Zeiger & Bacon's No. 2 Crossett Lbr. Co., 3,870 ft. N, 505 ft. E, SE cor. SE SW of Sec. 36, in Sec. 41.
S.D. 50 ft.

Ouachita Parish

American Liberty Oil Co.'s No. 1 Golson, C NW Sec. 25-17-1e.
Set 5½-in. 5,200 ft.; T.D. 5,281 ft.

Carbon Consolidated's No. 6 Feazel, 2,310 ft. N and 760 ft. W of center Sec. 25-19-3E.
Comp.; 6,000,000 ft. gas, 2,195 ft.

Inabnet & Piper's No. 2 D'Arbone, 660 ft. S and W, NE cor. Sec. 28-19-3e.
Set 8⅝-in. 2,161 ft.

Inabet & Piper's No. 2 Douglas, 376 ft. S, 587 ft. W, NE cor. NW Sec. 31-19-4e.
Comp.; 1,500,000 ft. gas, 2,191 ft.

Interstate Nat. Gas Co.'s No. 42 fee, 350 ft. S of NW cor. NE NE Sec. 24-19-3e.
Set 6-in. 2,150 ft.

Interstate Nat. as Co.'s No. 40 fee, 475 ft. S and 396 ft. E of NW cor. SE Sec. 30-19-4e.
Set 6-in. 2,100 ft.

Rapides Parish

Amerada Pet. Co.'s No. 1 Weil, 2,450 ft. N, 550 ft. E, SW cor. Sec. 53-1s-2e.
P.B. to 5,688 ft. from 6,837 ft.

Natchitoches Parish

Ab Jones' No. 1 Brown Lbr. Co., 400 ft. N, 330 ft. W, SE cor. Sec. 5-10-10.
S.D. 1,033 ft.

Union Petroleum Co.'s No. 1 DeBlieux, 1,395 ft. E, 150 ft. S, NW cor. Sec. 83-10-7.
Drlg. 2,150 ft.

Red River Parish

India Oil Co.'s No. 1 La. Pecan Co., 2,590 ft. W and 850 ft. N of SE cor. Sec. 27-13-11.
S.D. 550 ft.

J. S. Tuffree's No. 1 Wilkinson, 1,320 ft. S and W, NE cor. Sec. 11-12-11.
S.D. 1,395 ft.

Sabine Parish

B. S. & M. Oil Co.'s No. 1 Tatum, 330 ft. S and E, NW cor. NW SE Sec. 32-8-13.
P.B. to 1,590 ft. from 2,100 ft.

Jack Lent's No. 1 Williams, Sec. 13-7-11
Tested, show oil 2,675 ft.

Geo. L. Pace's No. 4 DeSoto Corp., 330 ft. S and W NE cor. SE SE Sec. 27-10-13.
Testing 1,918 ft.; old T.D. 1,978 ft.

Pearl Oil Corp.'s No. 5 M. Cranford, Sec. 20-9-13.
Set 10-in. 61 ft.; drlg. 1,210 ft.

Lee Whitehurst's No. 5 Frost Lbr. Ind., C NW SW SE Sec. 20-9-13.
Used acid; W.O. 1,614 ft.

Webster Parish

Bennett & Eldred's No. 1 Fulbright, NE NE Sec. 1-18-10.
Drlg. 2,375 ft.

Winn Parish

Parsons et al's No. 1 Tremont Lbr. Co., 660 ft. S, 330 ft. E NW cor. SW Sec. 10-12-2w.
S.D. 1,120 ft.

ARKANSAS

Arkansas County

Grand Prairie Realty Co.'s No. 2 Fischer 412 ft. S, 12 ft. W, NE cor. NW NW Sec. 6-6-4w.
T.A. 1,628 ft.

Ashley County

Benedum & Trees' No. 1 Holmes, C NE SW Sec. 4-17-5.
Drlg. red shale 4,170 ft.

Columbia County

J. G. Cubage et al's No. 1 Rhea, 150 ft. N line, 330 ft. E, SW cor. SE SE Sec. 12-17-22.
S.D. 3,506 ft.

Southern States Gas Co.'s No. 1 Piney Woods Lbr. Co., 330 ft. N and E, SW cor. NE NW Sec. 10-20-22.
S.D. 1,924 ft.

Dallas County

McCall & Kelly's No. 1 Ray Owen, 330 ft. S and E, NW cor. NW SW.
S.D. 1,456 ft.

Hempstead County

G. L. Glass, tr.'s No. 1 May B. O'Bier, Sec. 32-12-23.
Derrick.

F. W. Martin's No. 2 Lafferty, C NW Sec. 17-14-24.
Rigging up.

LaFayette County

Earl F. Fox' No. 2 Coleman Bros., NE NE Sec. 30-16-24.
Set 10-in. 135 ft.

Kamon & Neely's No. 1 Cockran, NW cor. SE SW Sec. 26-19-25.
S.D. 4,450 ft.

Joe Modisett's No. 1 Red River Lbr. Co., C SW SW Sec. 21-19-14.
Drlg. 5,270 ft.

Riggs Bros.' No. 1 Dubose, SE cor. SW NW Sec. 35-15-24.
S.D. 2,800 ft.

Transportation Pet. Co.'s No. 1 Cockran, 300 ft. S and W, NE cor. SE Sec. 36-19-25.
S.D.; W.O. 3,345 ft.

Miller County

E. J. Donohue's No. 4 Beck, 330 ft. N and W, SE cor. NE SE Sec. 33-15-26.
Drlg. 1,180 ft.

M. D. K. Fitzwater's No. 1 E. H. Beck, 150 ft. N and E, SW cor. NW SW Sec. 34-15-26.
W.O.S.R. 2,919 ft.

Haynes Prod. Co.'s No. 1 Embree estate, 330 ft. N and W, SE cor. SW SW sec. 9-20-28.
Set 15½-in. 60 ft.

King Oil Corp.'s No. 1 G. W. Crank, SW NE Sec. 19-16-26.
Fishing for D.S. and bit 3,155 ft.

C V. Lenz's No. 1 A. Dean, NW cor. SE Sec. 24-15-26.
Coring 2,847 ft.

M. H. S. Oil Co.'s No. 2 Beck, Sec. 34-15-26.
Drlg. 1,220 ft.

L. H. Mahon et al's No. 1 Miller Land & Timber Co., SW cor. SE Sec. 29-18-27.
S.D. 150 ft.

Monroe County

J. R. Lockhart et al's No. 1 Rue Abramson, SE cor. SE SE sec. 19-1s-1w.
Set 10-in. 400 ft.; coring 3,338 ft.

Nevada County

Carnett et al's No. 1 Floyd Munin, C SW Sec. 16-14-22.
S.D. 50 ft.

Ouachita County

Benedum & Trees' No. 1 H. Brighton, C NE SW Sec. 29-14-19.
Coring 4,050 ft.

Snow-Black Pet. Co.'s No. 1 Bedford, 660 ft. N and 150 ft. E, SW cor. Sec. 33-11-18.
Derrick up on new hole.

W. B. Street, trustee's No. 1 Roth & Cartier, 330 ft. N and E, SW cor. SW NE.
Drlg. 516 ft.

Poinsett County

Rockwell Dev. Co.'s No. 1 W. A. Smith, NE NE Sec. 13-11n-3e.
S.D. 2,140 ft.

Sevier County

Pendleton & Vaughn's No. 1 Dierke, C NW NE Sec. 14-10-29.
S.D. rep. rig 100 ft.

Union County

Arkansas Southern Oil Co.'s No. 1 F. R. Laney, Sec. 30-19-16.
Installing larger rig 175 ft.

J. C. Buckbee, Tr.'s No. 1 Sloan, 330 ft. N and E, SW cor. SE NW.
Arranging set 7-in. 2,147 ft.; old T.D. 3,271 ft.

J. E. Crosbie Inc.'s No. 1 Sullivant, 200 ft. N and W SE cor. SW NW Sec. 12-17 14.
Drlg. 2,900 ft.

Mrs. R. K. Jones et al's No. 1 Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14.
Arranging to test 3,297 ft.

O. O. Murphy, trustee's No. 1 L. Jones, 330 ft. N and W, SE cor. SE NW Sec. 12-19-12.
Drlg. 3,020 ft.

MISSISSIPPI

Bolivar County

White & Jones' No. 1 Ballou, SE SE NW Sec. 17-24n-7w.
S.D. 1,614 ft.

Clarke County

L. Beckwith et al's No. 1 Long Bell Lbr. Co., 538 ft. S, 125 ft. W of C Sec. 10-2n-16e.
T.A.; lack of funds.

Clarke County Oil Co.'s No. 1 Dora Butler, C SW SW Sec. 15-2n-16e.
Set 10-in. 63 ft.

Greene County

United Gas Pub. Ser. Co.'s No. 1 William Unit, 200 ft. N, 100 ft. W, C SW Sec. 6-15-5w.
Drlg. 2,550 ft.

Harrison County

Big Ridge Oil Co.'s No. 1 Hinzin, NE Sec. 13-7s-10w.
S.D.; W.O. 1,100 ft.

Lafayette County

W. L. Stewart et al's No. 1 Russell, 1,320 ft. N, 1,720 ft. E, SW cor. Sec. 9-10s-1w.
Drlg. 2,670 ft.

Lauderdale County

Bob Dalton's No. 1 Bounds, Sec. 34-7n-15e.
S.D.; W.O. 1,600 ft.

Warren County

H. W. Elliott et al's No. 2 R. L. Parker, 780 ft. E, 1,570 ft. S, NW cor. Sec. 14-14n-1e.
S.D.; W.O. 1,600 ft.

Washington County

Perkins & Dees' No. 1 Lee, 1,500 ft. E, 500 ft. N, SW cor. Sec. 33-15n-3w.
S.D. 2,175 ft.

Winston County

Jack Vale et al's No. 1 Moody, 713 ft. N, 667 ft. E, SW cor. NW SW Sec. 3-13n-14e.
Set 6-in. 2,212 ft.

ALABAMA

Houston County

Rice O. & G. Co.'s No. 1 Oakley Est., SE cor. NW SW Sec. 9-3n-29e.
S.D. 2,035 ft.

Lamar County

DeSoto O. & G. Corp.'s No. 1 Gardner, Sec. 22-15s-16w.
Drlg. 4,705 ft.

Mobile County

J. C. Prine's No. 1 C. H. M. King, N½ NE Sec. 4-1n-4w.
Drlg. 2,390 ft.

FLORIDA

Lake County

Oil Dev. Co. of Florida's No. 1 South Lake, SE SE Sec. 17-24s-25e.
S.D. at 1,946 ft. after coring 75 ft. of lime; awaiting acid treatment.

LA.-ARK. PROVEN

NORTH LOUISIANA

Caddo—Bodessa

Ark.-La. Gas Co.'s No. 5 Rodessa O. & Land Co., 289 ft. S, 140 ft. E, C Sec. 22-23-16.
Set 16-in. 226 ft.; drlg. 1,259 ft.

Ark.-La. Gas Co.'s No. 4 Rodessa Oil & Land Co., 590 ft. S, 588 ft. E, NW cor. NE Sec. 22-23-16.
Drlg. 5,074 ft.

Bartex Pipe Line Co.'s No. 1 Norton Est., 660 ft. N and W, SE cor. NE Sec. 18-23-15.
Drlg. 50 ft.

Bartex Pipe Line Co.'s No. 1 Rodessa O. & Land Co., 660 ft. N and W, SE cor. NE SE Sec. 13-23-16.
Derrick.

Danciger & Hall's No. 1 Willis C Lot 5, Blk. 7, Sec. 23-23-16.
Derrick.

Haynes Prod. Co.'s No. 1 Mattie Pitts, 290 ft. N, 264 ft. W, SE cor. NE NW sec. 14-23-16.
Rigging up.

Haynes Prod. Co.'s No. 4 Sexton, 337 ft. N, 230 ft. W, SE cor. SW NE sec. 14-23-16.
Drlg. 270 ft.

Haynes Prod. Co.'s No. 3 Sexton, 285 ft. S and 236 ft. W NE cor. SW NE Sec. 14-23-16.
Drlg. 4,547 ft.

Haynes Prod. Co.'s No. 3 Lawton, 660 ft. N, 990 ft. E, SW cor. Sec. 14-23-16.
Drlg. 5,571 ft.

Haynes Prod. Co.'s No. 2 T. F. Sexton, 665 ft. N, 660 ft. E, C Sec. 14-23-16.
Set 7-in. 5,854 ft.

Haynes Prod. Co.'s No. 2 Otwell, 660 ft. N and 330 ft. E of SW cor. Sec. 14-23-16.
Comp.; flowing 600 bbls. per hr., 6,012 ft.

W. M. Layton et al's No. 1 Tyson, 325 ft. N, 330 ft. W, C Sec. 22-23-16.
Drlg. 5,280 ft.

M. H. Marr et al's No. 1 W. J. Hunter, 330 ft. S and E, NW cor. SW sec. 13-23-16.
Rigging up.

McAlester Fuel Co.'s No. 1 Tyson, 250 ft. N, 150 ft. W, C Sec. 22-23-16.
Drlg. 4,321 ft.

Geo. Mannahan's No. 1 T. M. Comegys, 330 ft. N and W, SE cor. NE SE Sec. 10-23-16.
Coring 5,840 ft.

R. W. Norton's No. 2-A Caddo Levee Board, 1,320 ft. S, 660 ft. E, C Sec. 21-23-16.
Drlg. 4,717 ft.

R. W. Norton's No. 1 Tyson heirs, 1,980 ft. E, 660 ft. S, NW cor. Sec. 13-23-16.
Coring 6,000 ft.

R. W. Norton's No. 1 Fosque, 1,980 ft. N, 660 ft. W, SE cor. Sec. 20-23-16.
Drlg. 5,717 ft.

Pelican Oil & Gasoline Co.'s No. 4 Sexton, 330 ft. S and W, NE cor. SE NE sec. 14-23-16.
Rigging up.

Pelican Oil & Gasoline Co.'s No. 6 Sexton, 330 ft. S and E, NW cor. NE SE sec. 14-23-16.
Set 16-in. 289 ft.; drlg. 1,153 ft.

Pelican Oil & Gasoline Co.'s No. 2 Sexton, 330 ft. N and E, SW cor. SE NE Sec. 14-23-16.
Drlg. 5,154 ft.

Pelican Oil & Gasoline Co.'s No. 3 Sexton, 330 ft. S and E, NW cor. SE NE Sec. 14-23-16.
Drlg. 4,550 ft.

United Gas Public Service Co.'s No. 2 Ardis & Co., 330 ft. N, 1,980 ft. E, SW cor. sec. 14-23-16.
Rigging up.

United Gas Public Service Co.'s No. 3 Rodessa O. & Land Co., 660 ft. S, NW cor. sec. 23-23-16.
Rigging up.

United Gas Public Service Co.'s No. 1 Poole, 660 ft. S and W, NE cor. Sec. 21-23-16.
Drlg. 4,861 ft.

United Gas Public Service Co.'s No. 1 Ardis & Co., 660 ft. N, 1,980 ft. W, SE cor. Sec. 14-23-16.
Drlg. 4,816 ft.

United Gas Public Service Co.'s No. 1 Rodessa Oil & Land Co., 1,980 ft. N and 660 ft. W, SE cor. Sec. 15-23-15.
Comp.; flowing 700 bbls. daily, 5,978 ft.

G. H. Vaughn Prod. Co.'s No. 1 Hunter-Derryberry, 990 ft. S, 1,304 ft. E, NW cor. Sec. 14-23-16.
Comp.; flowing 140 bbls. per hr., 6,026 ft.

G. H. Vaughn Prod. Co.'s No. 1 T. M. Comegys, 330 ft. N and E, SW cor. SE SE Sec. 10-23-16.
Swabbing to test 6,000 ft.

Sabine Parish—Zwolle

Alexander & Crane's No. 1 Fogman, SE cor. N½ SW NE Sec. 18-7-11.
S.D. 2,655 ft.

Ivan A. Allen No. 1 Travis, 330 ft. S and W of NE cor. NE NW Sec. 13-7-11.
W.O. 6-in. csg., 2,361 ft.; (corrected).

H. C. Maulding's No. 1 Davis, 350 ft. N and W, SE cor. NE NE Sec. 2-7-11.
S.D. 400 ft.

A. H. Turner's No. 1 Baker, 330 ft. S and E NW cor. NW NE Sec. 36-8-12.
Cleaning hole to deepen 4,127 ft.

EAST TEXAS

(Border Counties)

Cass County

American Liberty Oil Co.'s No. 1 J. B. Rodgers, 330 ft. N, 430 ft. W, SE cor. of 160-ac. tract in C. M. Robinson Sur.
Set 16-in. 200 ft.; drlg. 1,000 ft.

R. W. Norton's No. 1 Haywood, 660 ft. N, 580 ft. W, SE cor. Priscilla Evans Sur.
Rigging up.

United Gas Public Service Co.'s No. 1 Thurman, 1,370 ft. S, 1,320 ft. W. NE cor. John Coleman Sur.
Drlg. 4,970 ft.

Harrison County

R. C. Payne et al's No. 1 Lowery, H. D. Spain Sur.
P.B. to 3,524 ft.

Marion County

Ed S. Holman's No. 1 Henderson, R. Bennington Sur.
P.B. to 2,443 ft.

Panola County

R. A. Graddy's No. 1 M. J. McCormick, J. McAdams Sur.
Drlg. 2,675 ft.

George Hudson et al's No. 1 J. F. Nail, C. McGeary Sur.
Set 8-in. 40 ft.; fishing for core bbl. at 2,345 ft.

Geo. Le Grand's No. 1 P. J. Wardleigh, A. Thompson Sur.
Set 10-in. 62 ft.

R. W. Price's No. 1 Crawford, J. A. Williams Sur.
Set 10-in. 64 ft.

Fred Stovall Drlg. Co.'s No. 1 H. D. Ivey, P. Martin H.R.S.
S.D. for csg. 1,980 ft.

Shelby County

Cliff Stoval's No. 1 Pickering Lbr. Co., C. H. Patterson Sur.
S.D.; rig repair, 1,485 ft.

S. W. TEXAS WILDCATS

Week Ending November 16

Atascosa County

R. C. Lee's No. 1 Atascosa Trust, 160 ft. S line, 300 ft. E line, 152-ac. lease, J. T. Russell Sur. No. 1,222.
Set sur. csg.; S.D. for water.

Robert McIntyre's No. 1 Billimek, 1,104 ft. SW line, 3,700 ft. SE line, J. D. Woodruff Sur. No. 246.
M.I. rig.

Bandera County

Plateau Oil Co.'s No. 1 Garrison, G.C.&S. F. Sur. No. 506, 1,500 ft. from W and 2,970 ft. from N lines of survey.
Drlg. soft shale 5,081 ft.

Bastrop County

Marts & Beaven's No. 1 Kirksey, 150 ft. NW and SW lines. 75-ac. tract, Geo. Glasscock Sur.
T.D. 2,560 ft.; D.&A.

Port Isabel Oil & Gas Co.'s No. 1 G. A. Smith, J. B. Blalock Sur., 600 ft. SE, NE cor. J. Doyle Sur.
T.D. 1,660 ft.; D.&A.

Bee County

Geo. W. Church's No. 1 Hearn, 2,000 ft. S No. 1 Wood.
Spudding in.

Geo. M. Church's No. 1 Ray, 360 ft. E line, 330 ft. N line, C 40-ac. tract, Anna Burk Sur.
Rigging up.

D. C. Smith's No. 1 Robertson, 150 ft. N and W lines, T. B. Barton Sur., Abst. 114.
Drlg. 3,031 ft.; no show.

Rogers Oil & Gas Co.'s No. 1 Goree, Thos. B. Barton Sur.
M.I.M.

Bexar County

Jas. B. Cunningham's No. 1 L. F. Ridder, 950 ft. S of Nelson Road, 1,300 ft. from E line, Block 5,196. Sur. No. 58.
T.D. 860 ft.; standing.

Dorine Oil Co.'s No. 1 Haywood, 1,000 ft. E No. 2 Tudyk, Cardenas Sur.
Drlg. 180 ft.

Morgan & Magna's No. 1 Kirkwood, Desaque Sur., 9 miles SW of San Antonio.
Location.

Bert Mowinkle's No. 1 Kotsur, 434 ft. N line, 150 ft. W line, Loringville Sur.
Spudded in.

H. B. Starkey's No. 1 McCloskey, 150 ft. W line, 1,525 ft. N line lease, Desague Sur.
T.D. 780 ft.; show oil; bailing.

Fred Thorman's No. 1 Sahn, 330 ft. E line, 600 ft. S line of tract, Sur. No. 3.
Spudded in; waiting on rotary rig.

Brooks County

Winfield and Mosser's No. 1 Singer, 660 ft. N and E lines, SE¼ Sec. 312.
No report.

Caldwell County

P. M. Armstrong's No. 1 Dunlap, 300 ft. W Bob Rose No. 1 Pierce, Dunlap area.
Bldg. derrick.

Clark & Crouch's No. 1 Jolly, 310 ft. SW line, Crenshaw Sur., 4,950 ft. NW line, House Sur.
T.D. 1,295 ft.; going on pump.

J. J. Elam's No. 1 Brown, 450 ft. SE and SW lines of lease, Souvereign Sur.
Rigging up.

Port Isabel Oil & Gas Co.'s No. 1 Baker, 990 ft. SE line, 330 ft. SW line, 167-ac.

tract, Geo. W. James Sur.
Drlg. 885 ft.

W. H. Jennings' No. 1 McMahan, 250 ft. SE and SW lines, 63-ac. tr.
Location.

Cameron County

Joseph Anderson's No. 1 Browne, 330 ft. N line, Blk. 379, San Benito Subd., Espiritu Santo grant, 2 miles N Rio Hondo
Standing 5,195 ft.

Kingwood & Daniels' No. 1 Port Isabel, Share 29.
Spudded in; S.D.

Dewitt County

Reginald F. Baurke's No. 1 W. C. Steinman Est., 937 ft. from N and S lines Uriah Blue 1-3 League.
To resume drilling; T.D. 2,412 ft.

D. G. Glaspier's No. 1 Schuebel, 330 ft from S and W lines of tract, Fitzgerald grant.
Set surface csg.; moving in larger rig

Duval County

J. H. Chandler's No. 2 Rita Pena, Share 4, Mesquite grant.
Skidded over from No. 1.

Magnolia Pet. Co.'s No. 1 D.C.R.C.-Sentz, 330 ft. S and E lines, Sur. 155.
T.D. 3,822 ft.; D.&A.

Magnolia Pet. Co.'s No. 1 Milano Land & Garden Co., 330 ft. S and W lines, Sur. 82.
Location.

Magnolia Pet. Co.'s No. 1 Worden-Duval, 330 ft. N and W lines, Sec. 153.
Location.

A. E. Masterson's No. 1 Rogers, 2,310 ft NE line, 1,650 ft. SE line, 40-ac. tract, H.&G.N. R.R. Co. Sur. 15.
Drlg. water well

Plymouth Oil Co.'s No. 1 Cuellar, 330 ft NW and NE lines, Sur. 122.
S.D.; T.D. 2,128 ft.

Rogers Oil & Gas Co.'s No. 1 Pure, 330 ft. S and E lines, Sec. 120.
M.I.M.

Santa Clara Oil Co.'s (Atkins & O'Neil) No. 1-B James F. Welder Heirs, 330 ft. SW cor. 640-ac. tr. lying W of sec. 525, in sec. 103.
Spudded in.

T. G. & M. Drlg. Co.'s No. 2 M. Davison, Sur. 90.
Rigging up.

Trinity Drillers, Inc.'s No. 1 Sweden ranch (Driscoll-Sevier), 330 ft. N and E lines Sec. 68, Santa Rosalie grant.
Moving in material.

Edwards County

Paul Teas' No. 1 Stewart, C SE¼, Sec. 1 G.C.&S.F. Sur.
Location.

Frio County

W. D. Bacon's No. 1 Burns, 2,500 ft. S and W line, Thomas Clifton Sur.
S.D. 2,230 ft.

Goliad County

John W. Greer's No. 1 Pettus, Sebastiana Vela Sur.
Location.

Hendricks et al's No. 1 Gillette, 330 ft of NW and SW lines of tract, G. Gomez Sur.
Location.

Keystone Royalty Co.'s No. 2 M. Woods 330 ft. S and E lines, SE¼ 160-ac. tract, Sec. 13, Josefa Rios Sur.
T.D. 6,690 ft.; running Schlumberger.

Thompson Drlg. Co.'s No. 1 Hays Taylor estate, 900 ft. SE line, 2,400 ft. W cor. 791-ac. tract, Smith Sur.
Set sur. csg. 360 ft.; W.O.C.

Gonzales County

Interallied Pet. Co.'s No. 1 Wells, 1,703 ft. S line, 185 ft. W line, Sec. 3, 643-ac. subvd., Wells Ranch.
Bane Sur.
T.D. 4,679 ft.; Edwards found dry.

Guadalupe County

Jim Harper's No. 1 Flucker, 220 ft. NE line, 150 ft. NW line of tract, Smith Sur. No. 15.
Reaming 1,870 ft.

Hopkins Bros.' No. 1 Sherrill, 150 ft. NW line, 625 ft. NE line, 200 ft. SW No. 1 Gabriel.
Bailing 750 ft.

R. C. Robbins' No. 1 Manford, 1,200 ft. E line, 750 ft. S line, 100-ac. tr., Hodges ⅝ league.
Drlg. 1,170 ft.

Hidalgo County

Gulf States Oil Co.'s No. 2 J. C. Engleman, 400 ft. S and E lines, Lot 3, Blk. 70, Las Mestanas grant.
Drlg. 2,795 ft.

Gulf States Oil Co.'s No. 1 Delta Orchards, 580 ft. from N line, 400 ft. W line, Lot 2, Blk. 73, Las Westanas Grant.
Rigging up.

Kingwood Oil Co.'s No. 2 Osca Daskom, 723 ft. N line, 1,895 ft. E line, Blk. 30, Porc. 45, J. of Reynosa.
Moving in material.

Lonegrat-Walden-Carmen's No. 1 Brock & Showers, 330 ft. W line, 615 ft. S line, Lot 4, Blk. 12, Por. 80.
T.D. 3,106 ft.; D.&A.

Maxwell's No. 1 Hidalgo Water Dist. No. 2, Lot 11, Blk. 20, Alamo Land & Sugar Co. Subd., Alamo tract, 10 miles SW McAllen.
Rigged up.

Sloan et al's No. 1 Brock & Showers, 330 ft. S and W lines, Lot 9, Blk. 16, Por. 80.
T.D. 6,002 ft.; plugged back and perforated 4,642-60 ft.; washing hole.

Dayle L. Smith Oil Co.'s No. 1 Fairbanks & Young, Blk. 44, Por. 46, Jurisdiction of Reynosa.
Rigging up.

Jim Hogg County

French Oil Corp.'s No. 1 E. Rodriguez, Share M-1, partition, Las Cuevitas grant
Location.

S. L. Miller Oil Co.'s No. 1 Yeager, 150 ft. E line, 477 ft. S line, Blk. 6, Sur. 20.
Drlg. 3,320 ft.

P. H. Neilson, trustee's No. 1 de la Garza, 580 ft. E line, 600 ft. S line, Blk. 293, Pippin Subd., Randado grant.
Location.

Jim Wells County

Putnam & Stewart's No. 1 Hawkins, 1,300 varas N, SW cor. lease, at R.R. and lease point, thence 1,300 varas W.
Coring 2,830 ft.

Smith & Storey's No. 1 McGill, 660 ft. S No. 1 Dilworth.
No report.

J. E. Walsh's No. 1 Wade, 750 ft. NW line, 300 ft. NE line, Lot 3, Blk. C.
Drlg. 1,710 ft.

Kendall County

H. W. Martin's No. 2 Edwin Houston, I.T.&N. Sur. 598.
Location.

Southwestern Dev. Co.'s No. 1 Werner 765 ft. W line, 1,645 ft. N line, J. F. Torrey Sur. No. 781
T.D. 972 ft., underreaming.

Kerr County

Auld and Evans' No. 1 Heffner, 660 ft. N line, 330 ft. E line, Sec. 13, B.S.&F. Sur.
Rigged up; S.D.

Eastland Oil Co.'s No. 5-E Love, 1,650 ft. E line, 300 ft. N line, Sur. 1,591.
T.D. 5,625 ft.; S.D.

Kleberg County

John Bartlett's No. 1 Anton Deitz, SE¼ SE¼ Sec. 48, K.T.&I. Subd.
No report.

Fidelity Oil Co.'s No. 1 Flato, 150 ft. S and E lines, Blk. 14, Sec. 40, K.T.&I. Sur.
Location

Fidelity Exp. Co.'s No. 1 Sam Michalk et al, 330 ft. from N line and 775 ft. from S line, Blk. 37, Sec. 5; 5 miles SE Kingsville.
Drlg. 2,990 ft.

LaSalle County

Bier & Witherspoon's No. 1 LaSalle Co., 1,320 ft. S and W lines, Sec. 19, Bland & Nelson Subd., O'Connor ranch.
Spudded in; W.O. rig.

Roy Shipman's No. 1 Coleman, 330 ft. SW cor. Blk. 15, Sur. 514.
Drlg. 1,660 ft.

Lee County

J. Spivey's No. 1 First National Bank, 300 ft. S and E lines, 646-ac. tract, Mack Sur.
Location.

Live Oak County

G. C. Beauchamp's No. 1 S. A. Joint Stock Land Bank, 150 ft. N and E lines, Turner Sur.
Location abnd.

E. H. Buchner's No. 1 McNeill, 300 ft. of SW cor. of 40-ac. tract, Blk. 5, McNeill Subd.
Location.

California Co.'s No. 1 Gillett Community Lands, 2,540 ft. NW line, 450 ft. S line lease, Refugio County School Lands, Sur. No. 7.
Spudded in; set sur. csg. 400 ft.; W.O.C.

Earl Calloway's No. 1 Lyne, 595 ft. of W line, 330 ft. of N line, SW¼ SW¼ of M. M. Lyne Sur.
Reaming down 3,790 ft.

H. H. Coffield's No. 1 Cowie, 250 ft. S and W lines, 130-ac. tr., Allen Sur.
Rigging up.

Ogden & Reed's No. 1 Reed, 330 ft. SW and NW lines, I.&G.N. R.R. Sur. No. 5, M.I.M.

Santa Clara Oil Co.'s (Atkins & O'Neil) No. 1 Corbett, sec. 2, R. H. Corbett Sur. M.I.M.

Trinity Drillers, Inc.-Groups' Nos. 1 and 2 Oil Corp.'s No. 1 McNeill, 40-ac. tract, Tract 1, Blk. 10, Jane Curry Sur.
Sand 4,290-4,419 ft.; D.S.T., 5 min., 300 lbs. W.P. ⅝-in. top and ¼-in. bottom chokes; dry gas.

Wheelock & Collins' No. 1 Kirby, 1,650 ft. S line, 5,795 ft. E line, 317-ac. tract, Thos. B. Reese Sur.
Drlg. 200 ft.

McMullen County

Aransas Oil Co.'s No. 1 Reed, 330 ft. E line, 1,320 ft. S line, Spicer Sur.
T.D. 1,680 ft.; S.D.

Bussa Oil Co.'s No. 1 J. H. Dickinson, 330 ft. E line, 4,340 ft. N line, G. B. Dilworth Sur. No. 24.
T.D. approx. 700 ft.; D.&A.

C. O. Garney's No. 1 Hagist, 330 ft. N and W lines, SE¼, Sur. 6.
Location.

Marzo Oil Co.'s No. 1-B Hagist, 330 ft., S and E lines, Sec. 6.
Drlg. 1,800 ft.

Reliance Oil & Royalty Co.'s No. 1 Shiner, 330 ft. NE cor. Sec. 29, C. C. Shumway Subvd.
Drlg. 500 ft.

Stewart et al's No. 1 G. Lowe, 2,000 ft. W line, 2,400 ft. S line, Geo. Bright Sur. No. 21.
Drlg. 310 ft.

Texio Oil Co.'s No. 1 Ellen Atkinson, C NW¼ NE¼ Sur. 96, M.I.M.

West & Stevenson's No. 1 Fisher, 330 ft. N and W lines, O'Boyle Sur.
Drlg. 523 ft.

Medina County

F. Brown's No. 1 Brucks, 900 ft. W line, 660 ft. S line, Brucks tract, John Ward Sur. No. 18.
Drlg. 539 ft.

Frank Brown's No. 2 Winn, 600 ft. W line, 300 ft. N line, Ward Sur.
Spudded in; S.D.

Caroca Oil Co.'s No. 2 Roy Taylor, 600 ft. N line, 150 ft. E line, NE¼ W½ Sur. 135.
No report.

Joe Dupree's No. 1 Brucks, 404 ft. N line, 165 ft. E line, Castro Sur. No. 248.
S.D. 750 ft.

Ed Falvey's No. 1 McMenemy, 160 ft. S and W lines, Sur. 32.
Standing 300 ft.

Gates & Hills' No. 3-B Odem, Castro Sur. No. 174.
Skidding over.

Letro Oil Corp.'s No. 1 E. B. Forrest, 1,928 ft. from N line, 1,908 ft. from E line of 640-ac. tract, Blk. 69.
No report.

Nueces County

Bluff Pet. Co.'s No. 1 Bluntzer, 330 ft. SW and SE lines, NE 1,007-ac. tract, Sec. 6, Casa Blanco grant.
No report.

J. K. Coulton's No. 1 Russell Savage, 220 ft. E line, 330 ft. S line, 7-ac. tr., Villareal Sur.
Skidding derrick.

La Jita Corp.'s No. 1 King, C SE¼ SW¼ Sec. 22.
Perforated 5,046-60 ft.; trying to complete.

S. Nelson's No. 1 Buckholt, 990 ft. E line, 150 ft. S line, S 114.3-ac. tract, Blk. 4, Sec. 316.
Drlg. 2,845 ft.

Santa Clara Oil Co.'s (Atkins & O'Neil) No. 1 Driscoll-Sevier, 4,456.2 ft. N line, 990 ft. E line, Wm. Gamble Sur.
Top sand 3,807 ft.; cored to 3,816 ft.; D.S.T. 12 min., ⅜-in. top and ¼-in. bottom chokes, 2,280 ft. oil; set csg. 3,807 ft.; W.O.C.

H. A. Meyer's No. 1 Harney, 850 ft. W line, 225 ft. S line, 3,200-ac. tract.
Location.

San Patricio County

Benedum & Trees' No. 1 Welder, 2,640 ft. N line, 660 ft. W line, Sec. 34.
Drlg. hard shale 6,461 ft.

George E. Smith's No. 1 Britton, 330 ft. N and W lines, Lot 8, Sec. 6.
Set sur. csg.; W.O.C.

Stanolind Oil & Gas Co.'s No. 1 Alamo Iron Works, 1,280 ft. N line, 330 ft. E line, Blk. 17, Fitzsimmons league.
Spudding in.

Starr County

Ash & Tackett's No. 1 Margo, 150 ft. S and E lines, Blk. 4, Share 3-B, Por. 70
T.D. 373 ft.; oil rising in hole; standing.

J. H. Clopton's No. 2 Bass, 2,460 ft. E line, Por. 87, 17,409 ft. W of Highway No. 4, Por. 87.
Drill stem stuck 400 ft.

Cook-Maris Arnold's No. 1 S.C.C.C., 220 ft. N line, 25 ft. E line, Lot 24, Por. 89.
Drlg. shale 1,860 ft.

Evans & James' No. 1 Ferry, 150 ft. S and SE lines lease, Por. 72.
T.D. 1,710 ft.; D.&A.

McCurry & Yates' No. 1 S.C.C.C., 150 ft W line, 510 ft. N line, Blk. 58, Porc. 89.
Location.

McCurry & Yates' No. 2 S.C.C.C., 150 ft. E line, 510 ft. N line, Blk. 58, Porc. 89.
Location.

Pedernal Oil Co.'s No. 1 Hicks et al, 187 ft. from NW line, 318 ft. from NE line of Blk. 6, Pedernal Grant.
T.D. 2,210 ft.; S.D.

Hiram M. Reed's No. 1 S.C.C.C., 888 ft. W line, 150 ft. N line, Blk. 66, Jefferies-Lambeth Subd., Porc. 89.
Spudded in.

Webb County

Austin & Vernon's No. 1 Jeffries, 150 ft NE line, 1,170 ft. SE line, Blk. 13, Sur 1,453.
Set surface csg.; S.D.; T.D. 40 ft.

Clopton & Doffing's No. 1 Slator, center Blk. 29, Borrego grant.
Drlg. 2,560 ft.

O. W. Killam's No. 1 Ortiz, 200 ft. SE line, 3,350 ft. S.W. road, Porc. 17.
Drlg. 720 ft.

Magnolia Pet. Co.'s No. 1 Garcia-Arribe 330 ft. S and E lines, Blk. 8, Albercas grant.
Coring 2,254 ft.

Magnolia Pet. Co.'s No. 1 Volpe Bros. 330 ft. N and W lines, Sur. 385.
Drlg. 4,536 ft.

Payne & Martinez's No. 1 Ferry, 150 ft. NE and NW lines, Sur. 177.
Location.

Arthur H. Wray's No. 1 Geo. Stuempfle, Share 1, Brewster pasture, Galan grant
No report.

S. S. & B. Oil Co.'s No. 6 Lone Star Co., 7,700 ft. NE line, 330 ft. SE line, Por. 12.
Standing 180 ft.

Willacy County

Kingwood Oil Co.'s No. 1 Santa Rosa, Inc., 160 ft. from E line, 637 ft. from S line of Sec. 30, Blk. 16, Share 44, San Juan de Carricitas grant.
Perforated 6,027-45 ft.; swabbing.

Zapata County

Murt Cullinan's No. 1 Gutierrez, Blk. 4, Share 2, Fansler Partition, Comitas Grant.
Rigging up.

J. J. O'Hern's No. 1 Raymond, 330 ft. NW line, 330 ft. NE line, Blk. 5, Share E, Por. 27.
Drlg. 2,015 ft.

S. W. TEXAS PROVEN

Week Ending November 16

Caesar—Bee County

Caesar Oil Co.'s No. 6 R. E. Miller, N offset to Commodor's No. 4 Grissom.
Location.

C. Echols' No. 1 Hudman, 150 ft. N and W lines, 10-ac. tract.
Pettus sand 3,085-88 ft.; set csg. 3,088 ft.; drlg. plugs.

Luling Oil & Gas Co.'s No. 1-B Hudman, 440 ft. SW No. 4 Hudman.
Drlg. 1,300 ft.

Sun Oil Co.'s No. 1 Barroum, 990 ft. N line, 330 ft. E line lease.
Location.

Dirks—Bee County

Home Oil Co.'s (Wrightsman) No. 7 Bassinger, 330 ft. S and W lines, NW¼, NW¼, sec. 7.
Top sand 3,800 ft.; coring 3,802 ft. to ream hole.

Illinois Pet. Co.'s No. 2 Rapp, 330 ft. N line, 66-ac. tract, 660 ft. W No. 1 Rapp, C. A. Dugat Sur.
Location.

Illinois Pet. Co.'s No. 3 Rapp, 330 ft. N line 66-ac. tract, 660 ft. W No. 2 Rapp, C. A. Dugat Sur.
Location.

Sun Oil Co.'s No. 4 Page, 660 ft. NE No. 2 Page, 330 ft. SE line lease, Young Sur.
Location.

Texas Co.'s No. 3 Young, 330 ft. S and W lines, G. W. Young Sur.
Drlg. 1,020 ft.

Texas Co.'s No. 11 Young, 660 ft. E No. 10, T. J. Butler Sur.
Sand 3,880-90 ft. and 3,900-11 ft.; comp. 17 bbls. per hr.; T.P. 500 lbs.; C.P. 250 lbs.

Ray—Bee County

J. R. Hill's No. 1-B Ray, W. B. Blanchard Sur.
Pettus sand 3,946-52 ft.; completing.

J. R. Hill's No. 2-A Ray, 1,447 ft. SE line lease, 660 ft. NW No. 1-A Ray.
Rigging up.

Simms Oil Co.'s No. 5 Ray, 330 ft. NW line, 1,447 ft. NE line lease, W. B. Blanchard Sur., Abs. 133.
Set surface csg., W.O.C.

Simms Oil Co.'s No. 6 Ray, 660 ft. SE No. 5 Ray, 1,447 ft. NE line of lease, W. B. Blanchard Sur.
Rigging up.

Simms Oil Co.'s No. 1-B Campbell, 150 ft. S and E lines, Lot 19, Bucher Subd., W. B. Blanchard Sur.
Moving in material.

Sun Oil Co.'s No. 3 Ray, 640 ft. W No. 2 Ray.
Rigged up.

R. J. Worthington's No. 1 Chestnut, 330 ft. NW cor. 40-ac. tract, B. O. Hadley Sur.
Spudded in; S.D.

Rutledge—Bee County

Worth Oil Co.'s No. 4 Rutledge, 660 ft. S No. 2 Rutledge, Hadley Sur.
Location.

Tuleta—Bee County

Highland Oil Co.'s No. 4 Campbell, 40-ac. tract, B.&B. Sur.
Spudded in.

Government Wells Pool—Duval County

Government Wells Oil Corp.'s No. 16 Lundell, Sur. 48.
Spudded in.

Magnolia Pet. Co.'s No. 3 Moody, NW¼ SW¼ Sur. 60.
Location.

Magnolia Pet. Co.'s No. 9 Johnson, center ½, E½, Sur. 44.
Derrick.

Kohler—Duval County

California Co.'s No. 1 Kohler, 330 ft. N line, 2,597 ft. W line tract.
sands 2,784-94 ft. and 2,857-70 ft.; odor oil; T.D. 3,777 ft.; running Schlumberger.

Labbe—Duval County

Stanolind O. & G. Co.'s No. 2 Farmers Life, 330 ft. N line, 3,327 ft. E line, E. B. Gray Sur., Sec. 416.
T.D. sand 2,466½ ft.; 10 min. D.S.T. 2,453-66½ ft.; W.P. 200 lbs.; dry gas.

Loma Novia—Duval County

Bridwell Oil Co.'s No. 3 B.C.C., 330 ft. S and E lines, NE¼, SW¼, Sur. 76.
Drlg. 2,450 ft.

Buchanan & Blanco Oil Co.'s No. 1-B Ruiz, 185 ft. N line, 1,650 ft. E line, Sur. 73.
Location.

Rodney DeLange's No. 4 C. W. Hahl, Sur. 78.
Location.

Rodney DeLange's No. 2 DuVon, Sur. 76.
Location.

Eastern States' No. 2 Hubbard, NW cor. SW¼ Sur. 71.
Sand 2,641-47 ft.; comp. on pump, no gauge.

Frank Gravis, No. 2 Byland, 330 ft. S and E lines, Blk. 4, Sur. 78.
Location.

Frank Gravis' No. 1 Eckdahl, 199 ft. E line, 400 ft. S line, Blk. 7, Sur. 78.
Drlg. 2,020 ft.

Gilcrease Oil Co.'s No. 1 Byland, 330 ft. N and W lines, Blk. 3, Sur. 78.
T.D. 2,589 ft.; comp. est 100 bbls. daily.

Grains & Gilcrease Oil Co.'s No. 3 Byland, Blk. 4, Sur. 78.
Location.

Hamill, Smith & Ogden's No. 28 Hubbard, 330 ft. SE cor., SE¼ NW¼ Sur. 77.
Location.

Hamill, Smith & Ogden's No. 4 Hubbard, 330 ft. NW cor. NW¼ SW¼ Sur. 77.
Sand 2,612-34 ft.; comp. 32 bbls. per hr. on ½-inch choke.

Hamill, Smith & Ogden's No. 31 Hubbard, 330 ft. SW cor., SE¼, NW¼, Sur. 77.
T.D. 2,675 ft.; comp. 32 bbls. per hr. on ½-inch choke.

Hamill, Smith & Ogden's No. 27 Hubbard, 330 ft. NE cor., SE¼, NW¼, Sur. 77.
Sand 2,663-81 ft.; comp. 24 bbls. per hr. on ½-inch choke.

Hamill, Smith & Ogden's No. 3 Hahl, 330 ft. N line, 200 ft. E line, 18.3-ac. tract; Sur. 78.
Location.

Hamill, Smith & Ogden's No. 4 Hahl, 330 ft. N and W lines, 18.3-ac. tract, Sur. 78.
Location.

Hamill, Smith & Ogden's No. 13 Hubbard, 330 ft. N and E lines, NE¼, SE¼, Sec. 77.
Derrick.

Hamill, Smith & Ogden's No. 14 Hubbard, 330 ft. S and E lines, NE¼, SE¼, Sec. 77.
Location.

Hamill, Smith & Ogden's No. 23 Hubbard, 330 ft. SW cor., NE¼, NW¼, Sur. 77.
T.D. 2,657 ft.; comp. 35 bbls. per hr.

Hamill, Smith & Ogden's No. 32 Hubbard, 330 ft. SE cor. SE¼ SW¼ Sur. 77.
Location.

Highland Oil Co.'s No. 4 Hubbard, SE¼, Sur. 75.
Sand 2,605-07 ft.; comp. est. 100 bbls. per day.

Humble O. & R. Co.'s No. 3-D Welder, 330 ft. S and E lines, sec. 72, S.K.&K. Sur.
Set. surface csg. 87 ft.; W.O.C.

Humble O. & R. Co.'s No. 2 M. C. Hubbard, 990 ft. S line, 330 ft. W line, 330-ac. lease, sec. 84.
Set csg. 2,804 ft.; W.O.C.

Humble O. & R. Co.'s No. 4-C Welder, 660 ft. S line, 1,320 ft. W line, Sur. 554.
Sand 2,701-05; comp. 14½ bbls. per hr. on ½-inch choke; C.P. 250 lbs.;T.P. 60 lbs.

Lipscomb & Daubert's No. 2 Hubbard, 330 ft. S and E lines, S½ NE¼ Sur. 75.
Set csg. 2,636 ft.; comp. on pump est. 100 bbls. per day; T.D. 2,667 ft.

Lipscomb and Daubert's No. 3 Hubbard, 330 ft. S and E lines, S½, NE¼, Sur. 75.
Location.

Magnolia Pet. Co.'s No. 10 Hahl, 640-ac. tr., Sur. 67.
Comp. 25 bbls. per hr.; T.D. 2,604 ft.

Magnolia Pet. Co.'s No. 11 Hahl, 640-ac. tr., Sur. 67.
Set csg. 2,582 ft.; W.O.C.

Magnolia Pet. Co.'s No. 2-C Magnolia-Hahl, Blk. 9, Sur. 78.
T.D. 2,528 ft.; comp. 10 bbls. per day.

Magnolia Pet. Co.'s No. 1-C Magnolia-Hahl, Blk. 9, Sur. 78.
T.D. 2,555 ft.; comp. on pump, no gauge.

Reynosa Oil Co.'s No. 3-B Mary Davison, 1,650 ft. E line, 330 ft. S line, Sur. 114.
Sand 2,565-69 ft.; set csg. 2,569 ft.; W.O.C.

Rosan Oil Co.'s No. 1 Hubbard, 330 ft. N and W lines, E½ Sur. 73.
Location.

Russ Pet. Co.'s No. 5-D Hahl, Sur. 64.
Sand 2,522-48 ft.; comp., no gauge; T.D. 2,548 ft.

Russ Pet. Co.'s No. 1 Duke, 330 ft. N and W lines, 40-ac. tract, Sec. 64, J. Poitevent Sur.
Location.

Shell Pet. Corp.'s No. 1 Hahl, 330 ft. N and E lines lease, Sur. 78.
Location.

Shell Pet. Corp.'s No. 13 Hubbard, 1,746 ft. N line, 330 ft. W line, E½ Sur. 77.
Digging pits.

Shell Pet. Corp.'s No. 15 Hubbard, 1,790 ft. N line, 330 ft. E line, E½ Sur. 77.
Set surface csg. 37 ft.; W.O.C.

Shell Pet. Corp.'s No. 12 Hubbard, 2,263 ft. E line, 1,086 ft. N line, 320-ac. tr., Sur. 77.
Top sand 2,683 ft.; csg. 2,680 ft.; W.O.C.

Shell Pet. Corp.'s No. 10 Hubbard, 993 ft. S line, 330 ft. E line, 320-ac. tract, Sur. 77.
Comp. 400 bbls. per day; C.P. 225 lbs.; T.P. 15 lbs.; T.D. shale 2,765 ft.

Shell Pet. Corp.'s No. 11 Hubbard, 330 ft. N and W lines, 320-ac. tract, Sur. 77.
Comp. 48 bbls. per hr.; top sand 2,685 ft.

Texas Co.'s No. 11 Wendt, 450-ac. tr., Sur. 62.
Sand 2,666-80 ft.; comp. 30 bbls. per hr. on ¾-inch choke.

Texas Co.'s No. 8 Hahl, Blk. 3, Sur. 78.
T.D. approx. 2,600 ft.; running csg.

Texas Co.'s No. 10 Vela, 2,970 ft. E line, 300 ft. S line, Sur. 42.
T.D. 2,610 ft.; swabbing.

Texas Co.'s No. 2-B Ruis, 330 ft. S and W lines, Sur. 41.
T.D. 2,578 ft.; S.D.

Piedras Pintas—Duval County

P. K. Kelly's No. 1 Tinney, 200 ft. E line, 1,100 ft. N line, Sur. 8.
Sand 800-05 ft.; standing.

Seven Sisters—Duval County

Atlantic Oil Prod. Co.'s No. 3 B. Welder, W½ SE¼ Sur. 385.
Location.

Atlantic Oil Prod. Co.'s No. 2 B. Welder, W½ SE¼, Sur. 385.
Set csg. 2,502 ft.; W.O.C.

Buchanan-Blanco Oil Co.'s No. 3 Wood-Welder, 990 ft. N ine, 330 ft. E line, 82.1-ac. tr., sec. 385.
Drlg. 2,200 ft.

Daube & Westheimer's No. 1-Z Campos, 330 ft. S and W lines, Sur. 224.
Drlg. 1,500 ft.

Henderson & Harvey's No. 1 Wood-Welder, 330 ft. S and W lines, NE¼, SE¼, Sur. 381.
Moving in material.

Humble O. & R. Co.'s No. 4 T. D. Smith, 990 ft. E line, 2,090 ft. N line, sec. 382, B.S.&F. Sur.
Location.

Humble O. & R. Co.'s No. 3 T. D. Smith, Sur. 382.
Set csg. 2,465 ft.; drlg. plugs.

Mid-Continent Pet. Corp.'s No. 3 Serna, S½ N½ Sur. 384.
Spudded in.

Mid-Continent Pet. Corp.'s No. 2 Serna, S½ N½ Sur. 384.
Comp. 35 bbls. per hr.; sand 2,480-85 ft.

T. P. Morgan's No. 1 Wood-Welder, Sur. 591.
T.D. 2,577 ft.; show water.

Santa Clara Oil Co.'s (Atkins & O'Neil) No. 6 Wood-Welder, 990 ft. N and E lines, NW¼, Sur. 385.
Coring 2,475 ft.

Shell Pet. Corp.'s No. 1 Wood-Welder, 330 ft. N and E lines, 80-ac. tract, W½ SW¼, Sur. 385.
Set csg. 2,467 ft.; drlg. plugs.

Hords Creek—Goliad County

Brown & Wheeler, Inc.'s No. 1 Kauffman, 1,650 ft. NW line, 330 ft. NE line, 4.-265.06-ac. tract, Trevino Sur.
T.D. 4,581 ft.; P.B. to 4,566 ft.; cleaning 5 bbls. per hr. on 1/8-inch choke, later changed to 1/16-inch choke.

M. I. Richardson's No. 1 Kaufan, 330 ft. NW and SW lines, 40-ac. tr.
Location.

Sun Oil Co.'s No. 1 Kaufman, 990 ft. SE line, 330 ft. SW line lease, Trevino Sur.
Digging pits.

North Petlus—Goliad County

Jane Oil Co.'s No. 5 Smith, 990 ft. SW line, 330 ft. SE line, B.&B. Sur. No. 35.
Derrick.

Southwest Darst Creek—Guadalupe

Doody Oil Co.'s No. 2 Katy Lay, 150 ft. N line, 343 ft. E No. 1, J. K. Davis Sur.
Spudded in.

Amy Oil Co.'s No. 2 Larison, 160 ft. W line, 300 ft. SW No. 1, Dewitt Sur.
Spudded in.

Stegal & Gallagher's No. 2 Lay, 20-ac. tr., Davis Sur.
Spudded in.

Mercedes—Hidalgo County

Union Sulphur Co.'s No. 5 American Rio Grande L. & I. Co., 330 ft. N line, 350 ft. W line, Tract 2,082.
Setting whipstock 7,438 ft. to sidetrack.

Union Sulphur Co.'s No. 6 American Rio Grande L. & I. Co., Tract 2,358, Blk. 49.
Coring 7,450 ft.

Samfordyce—Hidalgo County

J. H. Anderson's No. 1 Guerra, 232 ft. N line, 285 ft. W line, Tract 254, Por. 39.
Location.

Weekly Oil Corp.'s (Cortez) No. 2 Guerra, Tract 12, Porc. 41.
Sat. sand 2,758-64 ft.; comp. 40 bbls. per day on 3/32-inch choke; csg. perforated 2,760-64 ft.

Weekly Oil Corp.'s (Cortez) No. 2-C Smith, 230 ft. from N line, 690 ft. from W line of NE 40 acres of Tract B-3, Porcion 41.
Location.

Weekly Oil Corp.'s (Cortez) No. 3-C Smith, 230 ft. from N line, 1,150 ft. from W line of NE 40 acres of Tract B-3, Porcion 41.
Location.

Ralph E. Fair, Inc.'s (Kingwood) No. 4 Guerra, 165 ft. S line, 1,150 ft. E line Share 13, Por. 41.
Location.

Harrison, Davis & Bishop's No. 1 Guerra, 230 ft. S line, 616 ft. W line, S 40-ac., Tract 13, Por. 41.
M.I.M.

Harrison-Davis-Bishop's No. 6 Guerra, 230 ft. N and E lines, 40-ac. tract, Tract 13, Por. 41.
Drlg. shale 2,445 ft.

Harrison-Davis-Bishop's No. 7 Guerra, 230 ft. N line, 623 ft. E line, 40-ac. tract. Tract 13, Por. 41.
Location.

Harrison-Davis-Bishop's No. 8 Guerra, 230 ft. N line, 1,083 ft. E line, 40-ac. tract. Tract 13, Por. 41.
Location.

Harrison-Davis-Bishop's No. 9 Guerra, 230 ft. N and W lines, 40-ac. tract, Tract 13 Por. 41.
Location.

Hill & Hill's No. 1 Guerra, 150 ft. S and W lines, NE 12.5-ac., S 75-ac.; Tract 254, Porc. 40.
Spudded in.

W. F. Lacey's No. 2 Seabury, 350 ft. N and E lines, NE 10-ac., SE 51-ac., Tract 256, Por. 38.
Set surface csg. 205 ft.; W.O.C.

W. F. Lacey's No. 1 Lula George, 75 ft. S and W lines, 5-ac. tract, Tract 13, Por. 41.
Location.

W. F. Lacey's No. 2 Lula George, 75 ft. S and W lines, 10-ac. tract, Tract 13, Por. 41.
Location.

W. F. Lacey's No. 3 Lula George, 75 ft. S line, 550 ft. W line, 10-ac. tract, Tract 13, Por. 41.
Location.

Mundy & Sons' No. 1 Guerra, 853 ft. W line, 1,275 ft. N line, Tract 13, Por. 41.
P.B. 2,920-37 ft.; to perforate 2,763-68 ft.
Comp. gasser spraying some oil on ¼-inch choke; T.P. 1,000 lbs.; C.P. 700 lbs.

E. Powell's No. 2 Lula George, 330 ft. S and E lines, 20.11-ac. tract, Tract 18, Por. 41.
Top sand 2,723 ft.; coring 2,759 ft.

Showers & Moncrief's No. 2 Guerra, Tract 254, Por. 39.
Sd. 2,763-84 ft.; sh. 2,784-95 ft.; sat. 2,-795-99 ft.; comp. 69 bbls. per hr. on ¾-inch choke; T.P. 300 lbs.; C.P. 375 lbs.

North Petlus—Karnes County

Magnolia Pet. Co.'s No. 11 Porter, 564-ac. tract, B.&B. Sur.
Set csg. 202 ft.; W.O.C.

Magnolia Pet. Co.'s No. 10 Porter, 330 ft. SW line of lease, 660 ft. NW No. 1.
Oil sand 3,670-80 ft.; building pumping derrick.

Kingsville—Kleberg County

Fidelity & Culbertson Exploration Co.'s No. 2 Henry, Lot 2, Blk. 49.
Location.

Dinero—Live Oak County

Smith & Storey's No. 2 Dinero Townsite, Jane Curry Sur.
Set csg. top sand 5,186 ft.; comp. for gasser; T.P. and C.P. 1,800 lbs.

Fort Merrill—Live Oak County

Slick-Urschel Oil Co.'s No. 1 Watson & Shipp, 330 ft. NE line, 990 ft. SE line lease, offset Mills Bennett's No. 1 discovery well.
Waiting on gasoline rig.

McNeill—Live Oak County

Benco Oil Corp.'s No. 1 E. Mahoney, 155 ft. from NW line of J. H. Harvey tract, 3,109 ft. SW of highway in Mark Killelly Sur.
S.D. 78 ft.

Luray Oil Co.'s No. 1 Little, NE offset, Whittington's No. 2 Little, M. M. Shipp Sur.
Drlg. 2,800 ft.

J. O. Whittington's No. 4 Little, 990 ft. S and E lines, Shipp Sur.
Location.

Jacob Pool—McMullen County

L. O. Ormsby's No. 3 Jacob, 1,000 ft. NE line, 150 ft. SE line, Sparks Sur. 4.
T.D. 988 ft.; dry and abd.

Loma Oil Co.'s No. 43-A Jacobs, 2,080 ft. S line, 330 ft. W line, 640-ac. tract "A," Jacobs Sur. 9.
Moving in material.

Loma Oil Co.'s No. 41-A Jacob, 660 ft. N No. 40-A.
T.D. 940 ft.; dry and abd.

Texas Inland Oil Co.'s No. 1-B Lark, 150 ft. N and E lines, O'Boyle Sur.
Sand 963-82 ft.; testing.

Chas. Weist's No. 1 Lark, 150 ft. S and W lines, NW¼, Sec. 114.
Rigging up.

Baldwin—Nueces County

Gilcrease Oil Co.'s No. 3 Sanders, 910 ft. N line, 990 ft. E line, 100-ac. tract, B.S.&F. Sur. 165.
Set surface csg. 416 ft.; W.O.C.

Gilcrease Oil Co.'s No. 2 Sanders, 330 ft. S and E lines, 100-ac. tract, B.S.&F. Sur. No. 165.
Set csg. 4,058 ft.; comp. 16 bbls. per hr. through 2-inch open tubing.

Houston Oil Co.'s No. 4 Baldwin, 330 ft. N and E lines 425-ac. tract, B.S.&F. Sur. No. 165.
Location.

Magnolia Pet. Co.'s No. 4 Baldwin, 330 ft. N and W lines, 1,005-ac. tract, Sur. 165.
Drlg. gumbo 4,268 ft.

Magnolia Pet. Co.'s No. 2 Sanders, 330 ft. N and E lines, 100-ac. tract, B.S.&F. Sur. 165.
Drlg. gumbo 3,712 ft.

Saxet—Nueces County

Conservative Oil Co.'s No. 2 K. Hutchins, 330 ft. S line, 430 ft. W line, Blk. 29.
Resumed drlg. 1,044 ft.

Houston Oil Co.'s No. 2 Hunter, 330 ft. S and E lines, lease, Sur. 586.
Drlg. 4,075 ft.

Houston Oil Co.'s No. 5 Walton, 330 ft. NE line, 542.28-ac. tr., Villareal Survey.
Location.

Houston Oil Co.'s No. 7 Morgan, 330 ft. N and W lines, 494.8-ac. tr., Sec. 7.
Location.

Houston Oil Co.'s No. 8 Morgan, 330 ft. N line, 967 ft. W line, 494.8-ac. tr., sec. 7.
Location.

Houston Oil Co.'s No. 2 Harrell, 330 ft. N and E lines, Block 19, Sheppard Farm Lots.
Location.

Houston Oil Co.'s No. 3 Hunter, 330 ft. S and W lines, 159.87-ac. tr., Sur. 586.
Location.

Houston Oil Co.'s No. 2 Isensee, 330 ft. S and E lines, 40-ac. tract.
Drlg. 335 ft.

Magnolia Pet. Co.'s No. 3 Sanders, 330 ft. SW cor. 110-ac. tract, Sec. 165, B.S.&F. Sur.
Derrick.

Republic Natural Gas Co.'s No. 11 Dunn, 330 ft. S line, 660 ft. SE No. 10.
Coring 4,560 ft.

Shell Pet. Corp.'s No. 2 Isensee, 330 ft. S and W lines of 136-ac. tract, C. Land Sur Comp. flowing 1,032,000 ft. gas, with little oil, on 3/16-inch choke; T.P. 1,725 lbs.; C.P. 1,800 lbs.

Southern Minerals Corp.'s No. 1-A Isensee, 330 ft. E line, 990 ft. N line, 47-ac. tract, Sur. 404.
Sand 4,384-98 ft.; D.S.T. 10 min., 18 tribbles oil at 16 lbs. W.P.

Southern Minerals Corp.'s No. 3 Sally Page, 330 ft. S and E lines, 75-ac. tract, Sur. 556.
Skidding over.

Texon Royalty Co.'s No. 1 Taggert, 330 ft. N and E lines, Block 5, Sur. 401.
Set surface csg. 500 ft.; W.O.C.

Texon Royalty Co.'s No. 2 Isensee, center 15-ac. tract, 990 ft. N No. 1.
Sand 4,857-67 ft.; W.O.C.

Plymouth—San Patricio County

Conroe Drlg. Co.'s No. 3 D. Welder, sec. 47.
Drlg. hard sandy streaks, 1,777 ft.

Conroe Drlg. Co.'s No. 2 D. Welder, Sec. 47.
Drlg. shale and lime 5,030 ft.

Magnolia Pet. Co.'s No. 3 Corpus Christi Bank, 660 ft. S No. 2.
Set cs. 5,891 ft.; W.O. C.; D.S.T. 5,891-5,900 ft., 7 min., 1,080 ft. oil, ⅝-inch top and ¼-inch bottom chokes.

Plmouth Oil Co.'s No. 22-C Welder, 466 ft. W line, 1,599 ft. S line, sec. 71.
Set surface csg. 326 ft.; W.O.C.

Plymouth Oil Co.'s No. 23-C Welder, 933 ft. N, No. 20-C, 300 ft. Chiltipin Cr.
Location.

Plymouth Oil Co.'s No. 19-C Welder, 2,-307 ft. W line, 3,116¼ ft. N line, Sec. 44.
T.D. 5,618 ft.; flowing in pits.

Plymouth Oil Co.'s No. 20-C Welder, 2,333 ft. W line, 1,968 ft. N line, Sec. 48.
Top gas sand 5,573 ft.; top oil sand 5,602 ft.; preparing to test.

Plymouth Oil Co.'s No. 21-C Welder, 466 ft. W line, 2,332 ft. S line, Sec. 71.
Drlg. hard shale and lime 4,780 ft.

Sun Oil Co.'s No. 2 Hunt, Blk. 34, Lot 5.
Drlg. hard shale and sand 5,185 ft.

Barbacoas—Starr County

T. K. Irwin et al's No. 1 S.C.C.C., 150 ft. S and W lines, Blk. 58, Por. 89.
Plugged back 2,320 ft.; W.O.C.; to perforate 2,300-20 ft.

Rio Grande—Starr County

Hiram Reed's No. 1 Davis, 825 ft. W line, 150 ft. S line, Lot 16, Tract 78, Por. 81.
T.D. 1,802 ft., no sand; S.D. for orders.

W. W. Zimmerman's No. 3 D.&C., 522 ft. W line, 450 ft. S line, Blk. 1, Tract A-77, Por. 81.
Oil sand cored 1,464-71 ft.; attempting completion.

Samfordyce—Starr County

Phillips & Barnsdall's No. 4 Yturria L. & L. Co., 330 ft. E line, 874 ft. S line, 110-ac. tract, E½ Por. 100.
Building derrick.

Phillips & Barnsdall's No. 3 Yturria L. & L. Co., 2,080 ft. S line, 330 ft. W line, 110-ac. tract, Por. 100.
Sand 2,799-2,811 ft... preparing to perforate.

Porter & Pickens' No. 1-B Garcia Land & Cattle Co., 280 ft. N line, 380 ft. E line, 60-ac. tract, NW cor. Blk. 4, Porc. 100.
Drlg. 2,870 ft.

Porter & Pickens' No. 2-B Garcia Land & Cattle Co., 330 ft. N and W lines, 60-ac. tract, NW cor. Blk. 4, Por. 100.
Location.

Porter & Pickens' No. 3-B Garcia Land & Cattle Co., 330 ft. W line, 914 ft. S line, 60-ac. tract, Blk. 5, Por. 100.
Location.

Skelly Oil Co.'s No. 8 Seabury, 210 ft. N line, 198 ft. W line, 12-ac. tract, Tract 256, Por. 38.
Location.

Skelly Oil Co.'s No. 9 Seabury, 330 ft. N line, 230 ft. W line, 24-ac. tract, Tract 256, Por. 38.
Drlg. shale 2,250 ft.

Skelly Oil Co.'s No. 10 Seabury, 440 ft. N line, 230 ft. E line, 24-ac. tract, Tract 256, Por. 38.
Location.

Skelly Oil Co.'s No. 6 Seabury, 210 ft. S line, 248 ft. E line, E 15-ac., NW 30-ac., S 263.8-ac., Tract 256, Por. 38, J. of Reynosa.
Location.

Lopez—Webb County

C. F. Lewis' No. 2 Lopez, 330 ft. N and W lines, Sur. 110.
Location.

Mills Bennett Prod. Co.'s No. 2 Montemayor, 231-08 ft. W line, 1,429 ft. N line, sec. 114.
Set surface csg., W.O.C.

Mills Bennett Prod. Co.'s No. 1 Montemayor, Sur. 114.
Comp. 20 bbls. per hr. on ½-inch choke; sand 2,184-96 ft.; T.D. 2,196 ft.

Mills Bennett Prod. Co.'s No. 1 A. Lopez, SW cor. tract, Share 13, Tract 111.
Location.

G. G. Mortimer's No. 1-A Montemayor, 330 ft. N and W lines lease, Sur. 114.
Location.

G. G. Mortimer's No. 3 M. Lopez, Sur. 73.
Drlg. 1,770 ft.

G. G. Mortimer's No. 1-A J. Lopez, 990 ft. W line, 330 ft. S line, Sur. 111.
Set csg. on sand; W.O.C.

Nixon & Tabot's No. 1 Billings, 990 ft. E line, 975 ft. S line, Sur. 113.
Sand 2,170-77 ft.; D.S. test 2,173-77 ft.; 375 ft. oil in 10 min.; swabbing in.

Superior Oil Co.'s No. 1 Billings, 330 ft. N and E lines, Sur. 109.
Set csg. 2,249 ft.; drlg. plugs.

Laurel—Webb County

South Texas Oil Co.'s No. 2 Laurel, Sur. 269.
T.D. 2,569 ft.; dry and abd.

O'Hern—Webb County

O. W. Killam's No. 43 Bruni, Sur. 9, Foltz Subd., Arispe grant.
Location.

Magnolia Pet. Co.'s No. 19 Brennan-Benavides, C Blk. 285.
Location.

Magnolia Pet. Co.'s No. 20 Brennan-Benavides, C Blk. 354.
Drlg. 1,450 ft.

Magnolia Pet. Co.'s No. 18 Brennan-Benavides, C Blk. 328, Hale Subd., Arispe grant.
Comp., no gauge; T.D. 2,752 ft.

Magnolia Pet. Co.'s No. 5-X Benavides, cen. Blk. 119.
Drlg. 2,382 ft.

Magnolia Pet. Co.'s No. 10 G. Benavides. Sand 2,751-58 ft.; W.O. pump.

Magnolia Pet. Co.'s No. 6 Brennan-Benavides, center Blk. 326.
No report.

James P. Nash's No. 6 S. Benavides, Blk. 294, Hale Subd., Arispe grant.
Location.

J. J. O'Hern's No. 4 Brennan-Benavides, 347 ft. NW line, 313 ft. SW line, Blk. 136.
Location.

Texas Co.'s No. 7 Brennan-Benavides, C Blk. 355, Hale Subd., Arispe grant.
Location.

Escobas—Zapata County

S. R. C. Oil Corp.'s No. 16-A Trevino, 2,640 ft. E line, 330 ft. S line, Sur. 66.
Location.

Texas Co.'s No. 79 Whitehead, Cerrito Blanco grant.
Drlg. 1,150 ft.

Haynes—Zapata County

Clover Oil & Gas Co.-James P. Nash's No. 2 Haynes, Blk. 7, Haynes Subd., Comitas & Villa grants.
Skidding over.

Clover Oil & Gas Co. and J. P. Nash's No. 1 Haynes, 500 ft. SW line, 150 ft. NW line, Blk. 7.
Set csg. on sand 862 ft.; comp. 25 bbls. per day on pump.

E. C. TEXAS WILDCATS

Week Ending November 16

Cayuga Area—Anderson County

Tide Water Oil Co. et al's No. 21-A Willis, 4,079 ft. N and 2,333 ft. W of lease, S. Edmondson Sur. (Trinity test).
T.D. 9,085 ft.; P.B. 7,416 ft.; making 130 bbls. fluid per day, 60 per cent distillate with 6,800,000 ft. gas through ½-in. choke.

Long Lake Area—Anderson County

Tide Water Oil Co. et al's No. 3 Shaw & Cern, 923 ft. W of No. 1, D. Parker Sur.
Drlg. 110 ft.

Standard Oil Co. of Kansas' No. 1 Robinson & Hombs, 2,300 ft. from W and midway of N and S lines of lease, J. Adams Survey.
Rigged up.

Angelina County

Burnham et al's No. 1 Norton Properties, 760 ft. NW cor. and 600 ft. from E of W. M. Johnson Sur., 3 miles SW of Zavala in SE part of county.
S.D. 612 ft.

D. J. Le Blanc's No. 2 C. L. Dupuy, 800 ft. from S and 500 ft. from E of NW cor. of Blk. 43, H.T.&B. Sur., 4½ miles S of Huntington.
Drlg. 1,667 ft.

Morris et al's No. 1 Pruyear, cen. 165-ac. tract, Thos. Hank Sur., 7 miles E of Huntington.
Rigged up.

Pioneer Exp. Co.'s No. 1 J. A. Rose, 300 ft. SE and 200 NE of J. H. White 80-ac. tract, Sarah O'dell Sur.
Drlg. 1,425 ft.

Bowie County

B. J. Russell's No. 1 O. A. Hall, 2,350 ft. W line and 1,100 ft. S line of R. F. Peters Sur., SW cor. of county.
S.D. 120 ft.

Tex-Ark. Oil Co.'s No. 1 Hamilton Estate, 600 ft. E and 350 ft. N lines, J. Milan Jur., 4 miles S of Red River.
S.D. 1,121 ft.

Woodley & Bentley's No. 1 Lumpkin, 330 ft. out of NE cor. of 245-ac. tract, J. McDermot Sur., 1 mile SW of Dalby Springs.
S.D. 120 ft.

Camp County

E. J. Moran's No. 1 Wm. Mitcham Est., 660 ft. from N and W of 160-ac. tract, L. Rose Sur., 3 miles N of Newsome.
Elev. 442 ft.; top Woodbine 4,235-45 ft.; coring 4,475 ft.

Cherokee County

Wilson Stubbs Oil Co.'s No. 1 Rowborts, 660 ft. from S line, 150 ft. from W line of 160-ac. tract, 2 miles SW of Jacksonville, J. D. Wolfin Sur.
S.D. 1,553 ft.

Collin County

Port Bolivar O. & R. Co.'s No. 1-A Dunning, 24 ft. W of No. 1, Wm. Creager Sur., 2 miles SE of Van Alystin.
Elev. 722 ft.; S.D. 4,130 ft.

Port Bolivar O. & R. Co.'s No. 1 J. Shirley, 330 ft. N and W of 310-ac. tract, J. Sorrell Sur., 4 miles SE of Anna.
Elev. 684 ft.; S.D. 1,993 ft.

Ellis County

Beasley O. & G. Co.'s Inc.'s No. 1 E. Roller, 1,000 ft. from NW and 1,500 ft. from SW line of Sur.
S.D. 160 ft.

Fannin County

Warner Moore et al's No. 2 Hancock Est., 1,200 ft. N and 600 ft. E of L. M. Baldock Sur., 1 mile E of Trenton.
Location.

Warner Moore et al's No. 1 Hancock, 400 ft. from W and 150 ft. N lines, Sec. 16, L. M. Baldock Sur., ½ mile S of Trenton.
Top sand 645 ft.; S.D. 689 ft.

R. Franklin Smith-Allen's No. 1 Argo, center of 16½-ac. tract in J. G. Swisher Sur.
S.D. 1,393 ft.

Freestone County

J. J. Leighton et al's No. 1 G. Cochran, 330 ft. from N and W of 160-ac. tract, D. Bullock Sur., 6 miles S of League Base Austin 4,216 ft.; coring 4,250 ft.

Grayson County

Olson Drlg. Co.'s No. 1 Southwestern Life Ins. Co., center of 160-ac. tract and J. C. Jamison Sur., 6 miles NW of Denison.
Elev. 767 ft.; coring 3,100 ft.

Port Bolivar O. & R. Co.'s No. 1 C. Taylor, 330 ft. S and W of 1,643-ac. tract, Fitzhugh Sur., 2¼ miles SE of Gunter.
S.D. 2,920 ft.

Gregg County

C. L. Porter's No. 1 Mrs. F. G. Glover, 330 ft. N and 1,320 ft. from E line of Geo. Melton Sur. in SW cor. of county.
Elev. 419 ft.; drlg. 2,325 ft.

Henderson County

C. & G. Oil Co.'s No. 1 Sterrett, 350 ft. from S and 200 ft. from W of Isham Marshall Sur.
Drlg. 600 ft.

H. M. Wilson's No. 1 fee, 970 varas S of NE cor. of 943-ac. tract, 5 miles N of Malakoff.
Derrick.

Hill County

Roger Lacey et al's No. 1 J. H. Atchison Est., 330 ft. S and E of E. Carroll Sur., 5 miles W of Hillsboro.
Austin 130-428 ft.; coring 568 ft.

Hunt County

J. F. Morrissey & Co., Inc.'s No. 1 Fry, 643 ft. from N and 300 ft. from E of 146-ac. tract, 7 miles N of Commerce.
C. Davis Sur.
T.D. 4,407 ft.

Kaufman County

Murry & Emerson's No. 1 G. W. Martin, 1,660 ft. from W and 20 ft. from N of 140-ac. tract, from W, L. C. Butler Sur., 2 miles NE of Kemp.
Top Austin 1,940-74 ft.; S.D. 2,402 ft.

Lamar County

Bruce Brothers' No. 1 Chas. Price, 2,640 ft. S and 3,960 ft. from E line of Wm. Nelson Sur., 10 miles NE of Paris, 1 mile W of Trout.
S.D. 336 ft.

L. W. Dennis' No. 1 W. C. Clark, 800 ft. from E and 1,800 ft. from N line of G. H. Hall Sur., 3 miles NE of Reno.
Derrick.

L. W. Dennis, trustee's No. 1 Mrs. E. Lawrence, 300 ft. from N and 1,160 ft. from W of T. B. Roundtree Sur., 2 miles NE of Blossom.
Derrick.

Geo. Greer et al's No. 1 Calvin Marshall, 921 ft. from S and 2,292 ft. from E line of survey, 7 miles NE of Blossom in M.E.P.R.R. Sur.
Location.

Texas-Gulf Pet. Co.'s No. 1 A. L. Darnell, 1,490 varas from S and 1,950 varas from W line of H. L. Williams Sur., 4 miles NE of Paris.
S.D. 2,430 ft.

North Texas Synd., Eric T. Bradley, tr.'s No. 1 Wright, Alfred Moore Sur., 1,600 ft. S and 4,300 ft. from E line of Sur.
S.D. 2,644 ft.; tested salt water.

Leon County

Tide Water Oil Co. et al's No. 1-A Carter, 500 ft. due E and 2,150 ft. N of SW cor. of lease in S. Sanchez Sur. No. 7.
Austin 4,630-4,920 ft.; S.D. 5,330 ft.

Limestone County

D. Crawford's No. 1 Mary Ward, 150 ft. out of NE cor. 25-ac. tract, P. Varella Sur.
Drlg. plug. 3,005 ft.

McLennan County

T. Cunningham's No. 1 M. G. McKee, 940 ft. from S and 2,640 ft. W of 640-ac. tract, M. Snell Sur., near Bruceville.
Derrick.

Riley & Barrow's No. 1 Hortsman, V. C. Walters Sur., 500 ft. from most northerly N line, 500 ft. from most westerly E line, 500-ac. tract, 1½ miles S McGregor.
S.D. 475 ft.

Nacogdoches County

Rosser Bros. & Jackson's No. 1 Mattby, 330 ft. out of NE cor. 60-ac. tract, Pedro J. Esparza Sur., 5 miles S of Nacogdoches.
S.D. 565 ft.

Navarro County

McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-ac. tract, 1 mile W of Dawson, William Moss Sur.
S.D. 1,500 ft.

E. M. Thomason's No. 1 T. P. Shivers, 1,500 ft. from W. and 600 ft. N. of 69-ac. tract, W. R. Bowen Sur., 2 miles S. of Corsicana.
S.D. 1,287 ft.

Rains County

Allen & McClung's No. 1 Giles, T. Cunningham Sur., Abst. 143, 330 ft. from W line and 200 ft. from N line of 105-ac. Giles tract, 5 mi. SW of Emory.
Derrick.

Allen & McClung's No. 1 Ida Bullard, N. Brantely Sur., 1,300 ft. from W line and 200 ft. from N line of 25-ac. tract, 2 mi. SW of Emory.
Derrick.

Allen & McClung & Collard's No. 1 S. P. Cain, 1,350 ft. N and 1,550 ft. W line of J. Harges Sur., 1 mile NW of Emory.
Location.

Red River County

Abercrombie & Harrison's No. 1 Southern Pine Lumber Co., 1,148 ft. from S and 1,356 ft. from E, Joshia Davidson Sur., 12 miles NW of Clarksville.
Location.

Don F. Cleary's No. 1 C. S. Mowery, 150 ft. from S and 3,200 ft. W of most easterly E line of J. Bowerman Sur., 10 miles N of Clarksville.
Cored oil sand 1,130-50 ft.; 400 ft. fluid in hole, some oil; to bail out fluid; T.D. 1,144 ft.

Joe Dinger et al's No. 2 Morris, John Guest Sur., approx. 175 ft. NW of No. 1 Morris, 1 mile S Detroit.
S.D. 840 ft.

[illegible] et al's No. 1 J. F. Brooks, 600 ft. N and 600 ft. of W line of 320-ac tract, B. Gooch Sur., ½ mile S of Bagswell.
Derrick.

Joiner's No. 1 D. Rust, C. C. Wilborn Sur., 234 ft. N and 254 ft. W of most southerly SE cor. of Sur., just south of Avery.
Derrick.

Rockwall County

Dodd et al's No. 1 M. F. Lofland, 2,250 ft. from N and 2,250 ft. from E line of 352-ac. tract, W. H. Beird Sur., 2½ miles SE of Rockwall.
S.D. 192 ft.

Rusk County

Agey Drlg. Co.'s No. 1 John McWilliams Est., 330 ft. out of NW cor. of 240-ac. tract in J. C. De Lavina Sur.
Drlg. 3,450 ft.

J. W. Shipman et al's No. 1 Citizens Natl. Bank, NE cor. of 125-ac. tract, J. J. T'Barbo Sur., 4 miles NE of Henderson.
Elev. 432 ft.; drlg. 2,478 ft.

Titus County

S. Rotondi's No. 1 Lillianstun, 1,200 ft. E from NW cor. of J. Bodt Sur. and 330 ft. N. but in W. H. Crawford Sur., 5 miles NE of Talco.
Elev. 301 ft.; derrick.

Upshur County

E. S. Holman's No. 1 J. Daniels, 330 ft. from S and W of 47.5-acre tract, 5 miles W of field and 3 miles W of Prichett, Ira Stephenson Sur.
Coring 3,420 ft.

Van Zandt County

J. H. Gilliam et al's No. 1 E. S. Martin, 195 ft. most southerly SE line, and 208 ft. from most easterly SW line of tract, James Hamilton Sur., 3 miles NE of Wills Point.
Location.

Pioneer Exploration Co.'s No. 1 B. Spruce, 330 ft. out of SE cor. of 50-ac. tract, in J. Denman Sur., 8 miles S of Canton.
Top Austin 3,540 (broken) 3,590 (hard); Top Woodbine 4,554 ft.; drlg. 4,555 ft.

Wood County

Westgate Oil Co.'s No. 1 West Lake Hunting and Fishing Club, 660 ft. from S and E of 428.6-ac. tract, M. Rentarariz Sur., 14 miles E of Mineola.
Elev. 405 ft.; drlg. 2,010 ft.

WEST TEXAS WILDCATS

Week Ending November 16

Brewster County

F. C. Dodson's No. 1 Texas American Syndicate, 660 ft. from N and E, Sec. 66, Blk. 10, G.H.&S.A. Sur.
T.D. 1,715 ft.; R.U. on new location.

Joiner et al's No. 1 McIntyre, 353 ft. from S, 2,300 ft. from E of Sec. 21, Blk. 353, W. M. Mitchell Sur.
S.D. 2,150 ft.

King & Franklin's No. 1 Gage Est., C Sec. 135, Blk. 32, G.H.&S.A. Sur.
Elev. 4,244 ft.; S.D. 1,608 ft.

G. H. Storey's No. 1 Wilson, 1,980 ft. from N and E lines of Sec. 3, Blk. 212, T.&St.L. Sur.
Elev. 3,609 ft.; S.D. 1,875 ft.

Cochran County

Humble Oil & Ref. Co.'s No. 1 C. D. Slaughter, 5,606 ft. from S and 6,000 ft. from E lines of League 135, Armstrong County School Lands
Drlg. 4,537 ft.

Coke County

Haggerty et al's No. 1 Gaston, 340 ft. from S and 654 ft. from W, Sec. 11, Jos. Young Sur.
S.D. 3,250 ft.

Concho County

Maverick Oil Co.'s No. 1 Jim Rice, 330 ft. from S and W lines of NW¼ of Sec. 18, S.N. Ry. Sur.
S.D. 150 ft.

John W. Westbrook's No. 1 Ledbetter, 1,950 ft. from N and 3,300 ft. from E lines of Sec. 2, Sur. No. 1,673.
Drlg. 336 ft.

Crane County

Big Basin Pet. Corp.'s No. 1 Cowdin, 330 ft. from N and 1,650 ft. from E, sec. 77, Blk. X.
Spudded and S.D.

Gulf Prod. Co.'s No. 1 Waddell, C NW NW Sec. 4, Blk. B-27, P.S.L. Sur.
Top Simpson 6,060 ft.; T.D. 6,414 ft.; reaming hole.

Wahlenmaier Pet. Corp.'s No. 2 Kloh, 330 ft. from S and W, Sec. 33, Blk. 44, Twp. 3s, T.&P. Sur.
T.D. 2,795 ft.; U.R. csg.

Crockett County

J. G. Harris' No. 1 Parker, 438 ft. from S and 7,200 ft. from E, sec. 83, Blk. 1, I.&G.N. Sur.
Spudder.

Leslie-Hillier et al's No. 1 Todd, 1,200 ft. N and 330 ft. E, Sec. 36, Blk. WX, G.C.&S.F. Sur.
S.D. 821 ft.

John I. Moore's No. 1 A. C. Hoover, 330 ft. from S and E lines of Sec. 4, Blk. FF B.&B. Sur.
Spudded and shut down.

Culberson County

Anderson-Prichard Oil Corp., Magnolia Pet. Co. et al's No. 1 Borders, 1,255 ft. N and 2,305 ft. from W, Sec. 34, Blk. 69, P.S.L. Sur.
Drlg. 2,725 ft.

Dawson County

Adams & Turner's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.R.R. Sur.
S.D. 4,860 ft.

Ector County

W. P. Dunning, Jr., et al's No. 1 Mrs. Clarence Scharbauer, 440 ft. from S and 2,200 ft. from W lines of Sec. 33, Blk. 44, Twp. 1n, T.&P. Sur.
Drlg. 2,555 ft.

Gulf Prod. Co.'s No. 2 Goldsmith, 440 ft. from S and E, Sec. 22, Blk. 44, Twp. 1s, T.&P. Sur.
T.D. 3,890 ft.; drlg. plug.

Gulf Prod. Co.'s No. 2 Goldsmith, 2,200 ft. from N and 440 ft. from E lines of Sec. 15, Blk. 44, Twp. 1s, T.&P. Sur.
Drlg. 3,880 ft.

Empire G. & P. Co.'s No. 2 Wight, 440 ft. from N and W, Sec. 2, Blk. 43, Twp. 1s, T.&P. Sur.
S.D. 4,275 ft.; T.P. 4,113 ft.; testing.

Sinclair Prairie Oil Co.'s No. 2 Wight, 2,200 ft. from N and 440 ft. from E, Sec. 10, Blk. 43, Twp. 1s, T.&P. Sur.
T.D. 4,090 ft.; standardized.

Sun and Atlantic's No. 1 O. B. Holt, 1,980 ft. from S and 660 ft. from W lines of Sec. 6, Blk. 43, Twp. 1n, T.&P. Sur.
Drlg. 4,250 ft.

Sun Oil Co.'s No. 1 W. P. Edwards, 466 ft. from N and E lines of Sec. 20, Blk. 43, Twp. 3s, T.&P. Sur.
Drlg. 3,932 ft.

Roy Westbrook's No. 1 Yarbrough & Allen, 440 ft. from N and W, Sec. 26, Blk. B-14, P.S.L. Sur.
Elev. 2,824 ft.; abd. 4,195 ft.

York & Harper's No. 1 H. C. Foster, 660 ft. S and E Sec. 13-43-2s, T.&P. Sur.
T.D. 2,940 ft.; to set csg.

Edwards County

O. L. Williams' No. 1 Holman, 300 ft. from N and E, Sec. 145, C.C.S.D.&R.G.N.G. Sur.
Drlg. 1,261 ft.

Fisher County

L. A. Daniels et al's No. 1 J. J. Nickless, 1,700 ft. S and 2,070 ft. W of SW cor. of Sec. 60, H.T.&B. Sur., but in Sub. 1, G. W. Lawrence Sur., 6 miles E of Roby.
S.D. 530 ft.

Tide Water's No. 2 Howard, 1,620 ft. from N and 1,550 ft. from E lines of Sec. 180, Blk. 2, H.&T.C. Sur.
T.D. 3,078 ft.; U.R. csg.

Tide Water Oil Co.'s No. 1 Newman, 1,758 ft. from N and 1,054 ft. from W of NE¼ Sec. 2¼, John Rodman Sur., 4 miles SE of Roby.
S.D. 3,230 ft.

Gaines County

Stogner's No. 1 Kirk, SW¼ Sec. 28, Blk. A-21, 8 miles S of Seminole.
Ready to spud.

Wahlenmaier Pet. Co. et al's No. 1 E. H. Jones, 660 ft. S and W, Sec. 414, Blk. G, C.C.S.D.&R.G.N.G. Sur., 23 miles NW of Seminole.
T.D. 238 ft.; reaming hole.

W. T. Walsh et al's No. 1 Averitt, 330 ft. N and E lines Sec. 228, Blk. G, W.T.R.R. Sur.
Elev. 3,322 ft.; gas show 2,785 ft.; increase 2,795 ft.; T.D. 3,090 ft.; standardizing; increase gas at 3,036 ft. and 3,052 ft.

Garza County

Dobbs Oil Co.'s No. 1 W. E. Connell, 330 ft. from SW of NW ¼ Sec. 75, Blk. 5, G.H.&H. Sur.
Drlg. 2,757 ft.

Glasscock County

John I. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft.

from E line of Sec. 22, Blk. 34, Twp. 2s, T.&P. Sur.
Topped lime 9,471 ft.; show oil and gas 9,484-9,530 ft.; increase oil 9,594-9,600 ft. and 9,633-55 ft.; T.D. 10,115 ft.; made 150-bbl. flow when opened on test.

Howard County

T. P. Coal & Oil Co.'s No. 1 Douthit, 460 ft. from S and 2,310 ft. from W, Sec. 116, Blk. 29, W.&N.W. Sur.
Drlg. 1,745 ft.

Jeff Davis County

C. M. Joiner's No. 1 Jones & Coffield, 770 ft. from N and 1,322 ft. from E, Sec. 8, Blk. 3, H.&T.C. Sur.
S.D. 1,610 ft.

Jones County

Brown Eagle Oil Co. et al's No. 1 B. Fields, 4,166 ft. from N and 1,414 ft. from E lines of S. Andrews Sur.
Location.

Campbell et al's No. 1 Rowell, in E half of W half, Sec. 6, T.&P. Sur.
S.D. 2,529 ft.

Conway & Gholson's No. 1 Cauthen, 150 ft. from S and W lines of Sec. 24, G. A. Williams Sur.
T.D. 1,775 ft.; U.R. csg.

Farris & Fikes No. 3 Jennings, 220 ft. from S and W of NE of SE¼, Sec. 207, B.B.&C. Sur.
Machine rigged up.

Golden Pet. Co. and Cochran's No. 1 J. J. Steele, 150 ft. from N and W, Sub. 7, R. Grimes Sur. No. 8.
Drlg. 1,423 ft.

Humphrey-Guiberson Oil Corp.'s No. 1 Jennings, 220 ft. from N and 2,420 ft. from W, Sec. 207, B.B.B.&C. Sur.
T.D. 1,956 ft.; U.R. csg.

Tom D. Medders et al's No. 1 J. E. Manley, 1,170 ft. from S and E lines of Sec. 35, Blk. 14, T.&P. Sur.
Drlg. 1,600 ft.

Peckham & Danciger's No. 1 City of Stamford, 1,316 ft. from N and 174 ft. from E, sec. 204, B.B.B.&C. Sur.
Drlg. 825 ft.

Reliance Oil Co.'s No. 1 Crow, 660 ft. from S and 1,320 ft. from E lines of Sec. 9, D.&D.A. Sur.
Drlg. 860 ft.

Sandy Ridge Oil Co.'s No. 3 Jones, 1,520 ft. from N and 660 ft. from W, Sec. 5, Blk. 15, T.&P. Sur.
Drlg. 1,428 ft.

Sanders et al's No. 1 J. A. Martin, 220 ft. from S and E, Sec. 205, B.B.B.&C. Sur.
Drlg. 877 ft.

Sheldon Bros.' No. 1 J. Dillard, 1,000 ft. from S and 200 ft. from E, sec. 2, Blk. 17, T.&P. Sur.
Location.

Shoheen et al's No. 1 T. B. McCoy, 660 ft. from N and 1,320 ft. from E of most easterly SE cor. sec. 1, Blk. 16, T.&P. Sur.
Machine.

T. K. Simmons' No. 1 Beatty, 220 ft. from S and E of Sec. 4, O.A.L. Sur.
Drlg. 2,052 ft.

Kimble County

Forrest Dev. Co.'s No. 1 Stopp, 660 ft. from N and 1,866 ft. from W, Sec. 682, Blk. N, G.H.&S.A. Sur., 18 miles SE of Junction.
Drlg. 1,550 ft.

Loving County

D. C. Evans' No. 1 W. D. Johnson, 2,310 ft. from N and 1,650 ft. from W, Sec. 12, Blk. 57, Twp. 1, T.&P. Sur.
S.D. 2,618 ft.

Mitchell County

Lockhart et al's No. 1 W. C. Berry, 330 ft. from N and 2,310 ft. from E, Sec. 60, Blk. 97, H.&T.C. Sur.
S.D. 1,802 ft.; show oil 1,716-36 ft.; to acidize.

Sawtell & Grueber's No. 1 Morrison.
T.D. 2,810 ft.; P.B. to 2,800 ft.; pumping 10 bbls. oil and 10 bbls. wtr. per day.

Southern Union Prod. Co.'s No. 1 Castin, 330 ft. from S and E, Sec. 11, Blk. 28, 1s, T.&P. Sur.
Spudded and S.D.

Pecos County

Ajax Drlg. Co.'s No. 1 University, 2,310 ft. from S and W, Sec. 13, Blk. 18.
Drlg. 815 ft.

C. R. Richards' No. 4 Courtney, 920 ft from N and W, Sec. 78, Blk. OW, 360 ft. S of No. 2.
Elev. 2,967 ft.; fishing 1,100 ft.

Tex-Mex Pet. Co.'s No. 1 Phillips-Brandenburg, 330 ft. from S and E of N half Sec. 43, Blk. 3, H.&G.N. Sur.
Drlg. 1,622 ft.

Trans-Pecos Oil Co.'s No. 1 F. W. Popham, 1,650 ft. from S and E, Sec. 235, Blk. 11, G.H.&S.A. Sur.
To spud.

Trans-Tex. Oil Co.'s No. 1 Caldwell, 330 ft. from E line and 330 ft. from S line of Sec. 27, Blk. 40, Twp. 9, T.&P. Sur.
S.O. 3,905-4,000 ft.; 1 bailer oil in 48 hrs.; drlg. 4,969 ft.

Reagan County

Bahan & Rhodes' No. 1 Reed, 1,320 ft. from N and W, Sec. 31, Blk. 35, Twp. 5s, T.&P. Sur.
Drlg. 2,222 ft.

Dobbs Oil Co.'s No. 2 Friend, 660 ft. from W and 1,375 ft. from S, Sec. 3, Wm Allen Sur.
Location.

Skelly Oil Co.'s No. 6 Grayson, 1,320 ft. from N and 440 ft. from W, Sec. 33, Blk. 9, University Lands.
S.D. 640 ft.

Sun Oil Co.'s No. 1 L. W. Young, Sec. 1, G.C.&S.F. Sur., Abst. 170.
S.O. 2,385-90 ft.; top lime 2,340 ft.; drlg. 2,806 ft.

Reeves County

Grisham-Hunter Corp.'s No. 1 T. P. Land Trust, 1,320 ft. from S and W lines, Sec. 27, Blk. 57, Twp. 2, T.&P. Sur.
Elev. 3,020 ft.; S.D. 2,390 ft.

Washington Oil Co.'s No. 1 J. M. Radford Grocery Co., 2,640 ft. from S and 340 ft. from E, Sec. 39, Blk. 56, P.S.L. Sur.
Elev. 3,169 ft.; T.D. 502 ft.

Schleicher County

John M. Cooper et al's No. 1 Bert Page, 1,290 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur.
T.D. 6,257 ft.; P.B. to 5,565 ft.; acidized and made estimated 6,000,000 ft. gas.

Scurry County

Coffield & Guthrie's No. 1 Wade, 990 ft. from N and 330 ft. from W, Sec. 115, Blk. 97, H.&T.C. Sur.
Drlg. 2,816 ft.

Sutton County

Fleetborn Oil Corp.'s No. 1 G. S. Allison, 660 ft. from S and W, Sec. 49, Blk. A, G.W.T.&P. Sur.
Drlg. 1,657 ft.

Upton County

Humble O. & R. Co.'s No. 1 Pollock, C of NW Sec. 4, Blk. M.
Drlg. 11,076 ft.

J. G. McKenzie's No. 1 Taylor, 1,650 ft. from S and 330 ft. from E lines of Sec. 22, Blk. B-2, G.H.&S.F. Sur.
T.D. 630 ft.

W. C. Ray's No. 1 Cordova-Union, 2,635 ft. from S and 2,295 ft. from W of NE¼ Sec. 3, A.B. Sur., 5 mi. SE of McCamey.
Drlg. 2,122 ft.

A. E. Lynch et al's No. 1 Sherk, 330 ft. from N and E, Sec. 25, Blk. 2, M.K.&T. Sur., 2 mi. E and 8 mi. N of McCamey.
Drlg. by tools 470 ft.

Ward County

Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 34, H.&T.C. Sur.
Drlg. 2,465 ft.

California Co. et al's No. 1 McFarland, 990 ft. from NE and 330 ft. from SE Sec. 29, Blk. 34, H.&T.C. Sur.
T.D. 2,580 ft.; testing.

C. Cochran's No. 1 K. Greene, 990 ft. from NW and 2,980 ft. from SW, Sec. 29, Blk. B-29, P.S.L. Sur.
Drlg. 937 ft.

Empire G. & F. Co.'s No. 2 Smith, 990 ft. from N and 1,650 ft. from E, Sec. 5, Blk. F.
T.D. 3,090 ft.; C.O. 3,010 ft. after shot.

Stanolind O. & G. Co.'s No. 1 W. H. Martin, 1,650 ft. SW and 330 ft. from SE Sec. 40, Blk. 34, H.&T.C. Sur.
T.D. 2,595 ft.; testing; failed to flow through tubing.

Wahlenmaier et al's No. 1 Potts, 990 ft. from SW and 330 ft. from SE, Sec. 28, Blk. B-29.
Drlg. 381 ft.

Winkler County

Crafton Oil Co.'s No. 2 Pure-Walton, 2,200 ft. N and E, Sec. 1, Blk. 3-B.
Material.

Emperor Oil Co.'s No. 1 Continental-Holley, 330 ft. from S and 2,310 ft. from W, Sec. 12, Blk. B-12.
Drlg. 1,279 ft.

Gulf Prod. Co.'s No. 3 Keystone Cattle Co., 330 ft. from N and W of NE¼ Sec. 11, Blk. B-3.
T.D. 3,765 ft.; P.B. 3,320 ft.; flowing oil and wtr.

Gulf Prod. Co.'s No. 8 Keystone Cattle Co., 330 ft. from S and W of Sec. 12, Blk. B-2.
Elev. 2,964 ft.; T.D. 4,463 ft.; fishing 4,463 ft.

Richardson's No. 1 B. F. Jenkins, 440 ft from S and E, Sec. 13, Blk. 77, P.S.L.
T.D. 3,498 ft.; flowed 20 bbls. in 24 hrs. through csg.

Slosi Oil Co.'s No. 1 Lowett, 330 ft. from N and E, Sec. 36, Blk. 26, P.S.L. Sur
T.D. 3,130 ft.; P.B. 3,091 ft.; 2 bbls. oil and 1,840,000 ft. gas per day.

Sun Oil Co.'s No. 1 Crow, 440 ft. from S and W, Sec. 23, Blk. B-5.
Drlg. 3,100 ft.

Sun Oil Co.'s No. 1 Walton, 2,200 ft. from S and 440 ft. from E, Sec. 8, Blk. B-3.
T.D. 3,454 ft.; to shoot.

Westbrook's No. 1 Brown & Altman, 2,310 ft. from N and E, Sec. 5, Blk. B-5.
T.D. 3,207 ft.; shot and cleaning out.

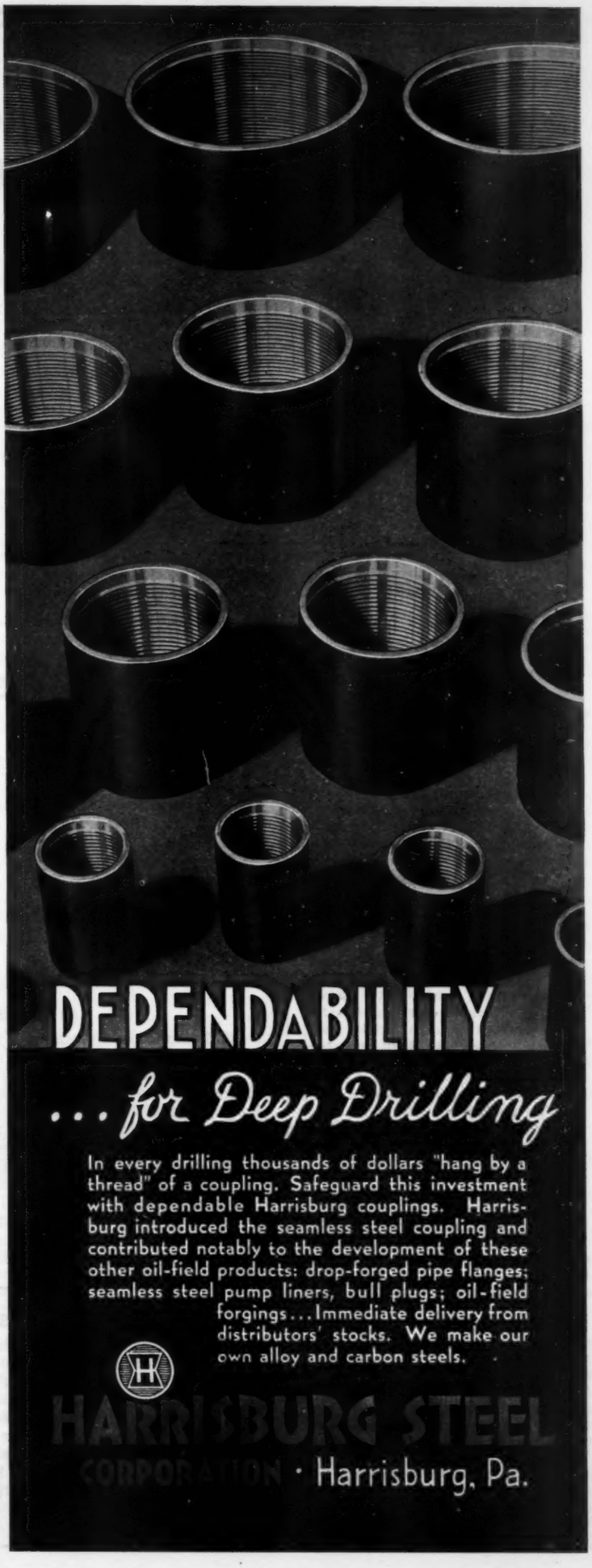
Thurman et al's No. 1 Seth Campbell 18-B-3, 330 ft. from S and 1,650 ft. from W lines of Sec. 18, Blk. B-3, P.S.L. Sur
T.D. 3,303 ft.; C.O. and ran tubing after shot; well heading.

Wahlenmaier et al's No. 1 Walton, 990 ft. from S and 330 ft. from E, Sec. 3, Blk. 26.
Drlg. 577 ft.

Wilgo Oil Corp.'s No. 1 Campbell, 900 ft from N and 300 ft. from E Sec. 2, Blk 5, P.S.L. Sur., 3 miles E of Kermit.
Elev. 2,884 ft.; T.D. 4,639 ft.; P.B 3,800 ft.; S.D.

Yoakum County

C. J. Davidson et al's No. 1 Bennett, 1,320 ft. from N and E, Sec. 678, John H. Gibson Sur.
Elev. 3,557 ft.; T.D. 5,090 ft.; shut down for 7-in. casing with 800 ft. oil in hole; show gas 3,400-10 ft. and 5,035-90 ft.; ran csg.; set 6⅝-in. csg. at 4,651 ft.; C.O. to 15 ft. off bottom; 2,000 ft. fluid in hole, mostly oil; S.D.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PERSONAL

GEORGE CALLIHAN, drilling contractor of Albany, Tex., has purchased the properties of the Acme Pipe & Supply Company, at Albany.

J. R. MANION, president of the Sinclair Prairie Pipe Line Company, Tulsa, was a business visitor to the company's offices at Houston, Tex., the past week.

W. B. CHASE, assistant to the president of the Shell Union Oil Company at New York, made a tour of inspection of the company's holdings in Coastal Louisiana the past week.

H. C. LAY, district engineer for the Shell Petroleum Corporation in the Iowa, Louisiana, district, has been promoted to divisional exploitation engineer to succeed W. A. ALEXANDER, in the White Castle district. Mr. Lay's place is being taken by G. V. LOVE who has been transferred from Oklahoma as district engineer.

W. C. FRYSINGER, manager of the Atlantic Refining Company, Hamburg, Germany, has returned from a visit to New York.

E. H. BRISTOL, an executive of the Foxboro Company, Foxboro, Mass., arrived in London, England, from New York recently.

MICHAEL L. HAIDER, petroleum engineer for the Carter Oil Company, with MRS. HAIDER, spent last week in Los Angeles, Calif., on vacation.

D. D. DAVIS, with the White Eagle Oil Corporation at Augusta, Kans., is visiting the Socony-Vacuum company's Casper, Wyo., refinery.

R. O. TRAYLOR, of the Standard Oil Company (Indiana) refinery at Casper, Wyo., returned to Casper with an elk and a deer bagged while on a hunting trip in the Jackson Hole country. MRS. TRAYLOR accompanied him on the trip.

W. BLACKWELL, immediate past-president of the British National Lubricating Oil and Grease Federation, has resigned from the council of the federation owing to ill health. WILLIAM BLACKWELL, JR., was elected to the council in his place.

R. CLAIRE COFFIN, former chief geologist with Midwest Refining Company at Denver, Colo., now on the geological staff of the Stanolind Oil & Gas Company at Tulsa, spoke on "The Peculiarities in Oil and Gas Distribution in Fields of the Rocky Mountain Area," to the Tulsa Geological Society.

SECRETARY B. H. SMYERS, JR., of the Pennsylvania Natural Gas Men's Association, has announced the appointment of the following committee chairmen for the year: Constitution and By-Laws, T. B. GREGORY; Finance, A. J. NEWMAN; Membership, S. W. MEALS; Policy, T. B. GREGORY; Program, F. B. JONES, and Sales, E. E. McCORMICK.

LESLIE A. JOHNSON, of the Sun Oil Company, Tulsa, announces arrival of a baby girl, Nov. 13.

BEN BROOKS, superintendent for the Sun Oil Company in the Beeville, Tex., district, has moved his headquarters from Lockhart to Beeville.

DAVID GRAY, manager of the Waggoner Refining Company at Electra, Tex., has resigned to enter the ranks of the independent operators in the Wichita Falls district. C. G. COCOANOWER, of Wichita Falls, has been named superintendent of the refinery to fill the vacancy.

JESS BULLARD, president of the National Oil Scouts Association and scout and land man for the Shell Petroleum Corporation, San Antonio, Tex., met the Kansas and Oklahoma scouts at a banquet in Shawnee, Okla., November 15, to discuss possible merging of the two scouts associations. From there he vacationed to northern points.

JACOB FRANCE, president of the Mid-Continent Petroleum Corporation, has been in Tulsa for several days in connection with a meeting of directors including E. M. ROUZER, vice president and secretary, of Baltimore, Md.; J. C. DENTON, vice president and general counsel; GEORGE O. MOODY, vice president in charge of production; HENRY N. GREIS, president of the Burke-Greis Oil Company; R. K. CASSATT, Philadelphia; A. W. GIESKE, Baltimore; J. J. HANAUER, Baltimore; W. W. LANAHAN, Baltimore; MAURICE NEWTON, New York; STUART OLIVER, Baltimore, and J. J. THEISEN, St. Joseph, Mich. Mr. France was elected vice president of the American Petroleum Institute in charge of the refining division at the Los Angeles meeting.

W. A. ALEXANDER, formerly divisional exploitation engineer for the Shell Petroleum Corporation in the White Castle, Texas, district, has been promoted to district superintendent for the same district.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Persistent rumors are that foreign capital is trying to buy out the Barnsdall Oil Co., founded and headed by Theodore N. Barnsdall, noted wildcatter.

The long considered plan of piping Louisiana natural gas to St. Louis, Mo., has been given up as impracticable by Laclede Gas Co.

Gene Palmer of the Ohio Oil Co. has been transferred to the Standard Oil Co. of Louisiana and placed in charge of that company's recent purchase of Trees Oil Co.'s properties in the Caddo field.

20 YEARS AGO

Oil companies in India engaging skilled American workmen specify in their contracts that if the "party of the second part" gives away any trade information to a rival company he is fined $1,500 which is taken from his wages. Also at the end of his contracted term of employment he must return at once to the United States.

Col. John J. Carter has retired from all active business. Recently he quit a bank directorship. Last summer he retired as president of the Carter Oil Co. He will devote most of his time to his fine farm near Titusville, Pa.

P. M. Shannon one of the discoverers of the Salt Creek field in Wyoming, dies in Pittsburgh, Pa. The Shannon sand in Wyoming was named in his honor.

10 YEARS AGO

Fuhrman Petroleum Co. sells a half interest in a quarter section in section 26-9-9, Hughes County, Oklahoma, for $500,000. It has one producing well.

It has recently been discovered that cracked gasoline is a superior product and that some of heavy, so-called fuel oils, when cracked, result in a premium motor fuel, which brings 2 to 5 cents higher price than "regular" gasoline.

Col. U. G. Lyons of Warren, Pa., prominent Pennsylvania grade refiner drowns when his houseboat goes over a dam on the Allegheny River.

WILLIAM PENN, head of the Penn Oil Company of Dallas, Tex., was a visitor at the Sun Oil Company offices in Tulsa last week.

EUGENE HOLMAN, president of the Creole Petroleum Corporation and the Lago Petroleum Corporation, was a recent visitor to Tulsa.

TOM BROWNFIELD, chief scout for the Carter Oil Company, was a speaker at the annual state oil scout meeting held at Shawnee, Okla., last week. He has been with the Carter company since 1927.

DR. E. F. ARMSTRONG, director of Herbert Green & Company, Ltd., and chairman of Oil Wharves, Ltd., has been elected president of the Association of British Chemical Manufacturers for the ensuing year.

J. WARREN KINSMAN, director of sales, organic chemicals of E. I. DuPont De Nemours & Company, Inc., of Wilmington, Del., is on a business trip in Tulsa and other Mid-Continent points following his return from attending the A.P.I. convention in Los Angeles.

C. E. WRIGHT, engineer for the Indian Territory Illuminating Oil Company, Oklahoma City, Okla., was the principal speaker at a meeting of the Kansas Chapter of the American Petroleum Institute at Wichita. He discussed pumping practices in the Oklahoma City field.

W. J. ARMSTRONG, chief oil and gas conservation officer in Oklahoma, will be confined to a Los Angeles, Calif., hospital for several days. Mr. Armstrong missed a step on the stairs of the Biltmore Hotel and broke several bones in his right foot. C. C. BROWN, Mr. Armstrong's assistant, and EARL FOSTER, attorney for the Oklahoma proration department, remained in Los Angeles to be with him. They had been attending the A.P.I. convention.

PARAGRAPHS

RALPH L. MAREK, division petroleum engineer on the Gulf Coast for the Texas Railroad Commission, has been transferred to Kilgore, where he will be division engineer for District 6, including East Texas, Van, Cayuga, Long Lake and Boggy Creek fields. He has been associated with the commission since April, 1934, starting as assistant division engineer in East Texas, and going to Houston in July, 1934. From January, 1930, to July, 1933, he was associate petroleum engineer with the Bureau of Mines at San Francisco. Previously he was petroleum engineer with Phillips Petroleum Company at Bartlesville, Okla., for 14 months, engaged in repressuring and gas-lift work, and before that with the Empire Companies at Bartlesville, Burbank and Tulsa. He graduated from the University of Tulsa in 1924 with a degree in mechanical engineering.

FRANK H. MURPHY, Tulsa oil man, and MRS. MURPHY have returned from Pennsylvania.

HENRY G. GOLDSCHMIDT, JR., has been appointed superintendent of the gas plant of the Peoples Light Company, Davenport, Iowa.

CHARLES E. STEVENSON, manager of the Port Arthur, Tex., refinery of the Gulf Refining Company, and MRS. STEVENSON have returned from a European vacation.

R. WERLIN, formerly with the patent department of the Phillips Petroleum Company at Bartlesville, Okla., is now associated with Barry and Cyr, patent attorneys of Washington, D. C., and has opened an office for that firm in Tulsa.

VERNON TAYLOR, president of the Peerless Oil & Gas Company of San Antonio, Tex., was in Dallas, Oklahoma City, Tulsa and other points in the Mid-Continent area this week following his return from the A.P.I. convention in California.

EDWARD DAWSON, of the Kansas geological staff of the Texas Company, has been promoted to district geologist in the southeastern Oklahoma district with offices at Shawnee, replacing H. H. Arnold, who has been moved into the Tulsa offices.

WILLIAM H. SAUNDERS, JR., president of the International Lubricant Corporation and recently elected president of the National Association of Lubricating Grease Manufacturers Association, visited in Tulsa this week and will return to his home in New Orleans by way of St. Louis.

The following members of the American Gas Association were elected to the 1936 General Nominating Committee: F. C. FREEMAN, Providence, R. I.; R. W. HENDEE, Tulsa; A. DEAN DUDLEY, Syracuse, N. Y.; GLENN R. CHAMBERLAIN, Grand Rapids, Mich.; H. L. MASSER, Los Angeles, Calif.; and F. A. MILLER, Bradford, Pa. The committee will report at the next annual convention.

GLENN LIVESAY, chief clerk of the production department for Sinclair Prairie Oil Company at Houston, Tex., is vacationing in Oklahoma.

JOHN EMERY ADAMS, geologist of Midland, Tex., addressed the Petroleum Club and geologists in Dallas last week on "Permian Geology of West Texas."

E. C. ISON, in charge of the paint department for the Sinclair Refining Company at New York, visited the company's offices at Houston, Tex., last week.

J. E. BAILEY, head engineer of the Texas Railroad Commission at Kilgore, has been promoted and transferred to Austin to become assistant to V. E. COTTINGHAM, who was recently made chief engineer of the commission. R. L. MAREK takes Mr. Bailey's place at Kilgore.

V. E. MILSARK, traffic manager, Parkersburg Rig & Reel Company, Parkersburg, W. Va., was a Tulsa visitor last week.

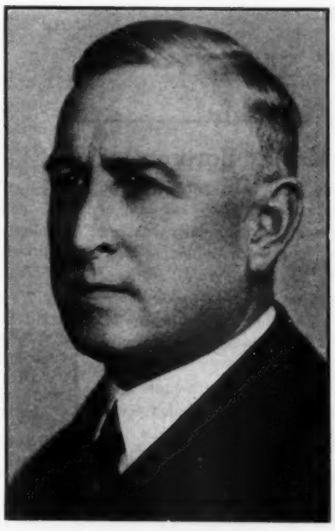
J. W. SELBY, chief scout for the Shell Petroleum Corporation at Houston, Tex., made an extended business trip through the West Texas district the past week.

E. M. PINCKARD, scout, and G. W. ARNOLD, land man, both with the Pure Oil Company at Houston, Tex., are spending their vacations hunting near Laredo, Tex.

R. L. INGLISH, formerly in charge of West Texas production for Sun Oil Company, has recently been transferred to Dallas, Tex., as assistant to JOHN A. RITTER, general superintendent. T. J. SWEENEY is being transferred from Dallas to Odessa, Tex., to take Mr. Inglish's place.

Rumania Will Miss Him

J. P. Hughes, who recently retired from active service after 16 years as general manager of the Societe Romano-Americana, with headquarters in Bucharest, Rumania, plans to spend much of his time at his beautiful New England home in Boxford, Essex County, Massachusetts. But his program includes extended travel also, especially in the Far East, whose culture and mode of life always have fascinated him. Before becoming general manager of Romano-Americana, which is a Standard Oil Company (New Jersey) subsidiary, Mr. Hughes had spent 12 years in Europe in the service of the parent company.



J. P. HUGHES

When Mr. Hughes was sent to Rumania shortly after the World War he addressed himself to the task of rebuilding what had been destroyed during the war, opening up new fields and expanding the company's general business. His foresight, enterprising spirit and friendliness won for him a high place in the esteem of the Rumanians and of executives of other oil companies. When his intention of leaving was announced expressions of regret came from petroleum companies, from financial and economic leaders and from newspapers.

Mr. Hughes entered the oil business with the Manhattan Oil Company, of Lima, Ohio, in 1891. This company later was absorbed by the Standard Oil Company. From 1902 to 1905 he was with the Waters Pierce Oil Company in St. Louis, Mo., after which he joined the auditing staff of the Standard Oil Company of New Jersey in New York. The company sent him to Europe to look after various interests there 28 years ago, and virtually his entire time was spent away from the United States from that time on.

H. F. OSLER has been elected president and D. C. COLEMAN vice president of the Calgary & Edmonton Corporation, Ltd., of Winnipeg, Manitoba.

W. C. TEAGLE, president of the Standard Oil Company (New Jersey), has been elected a Group B director of the Federal Reserve Bank of New York.

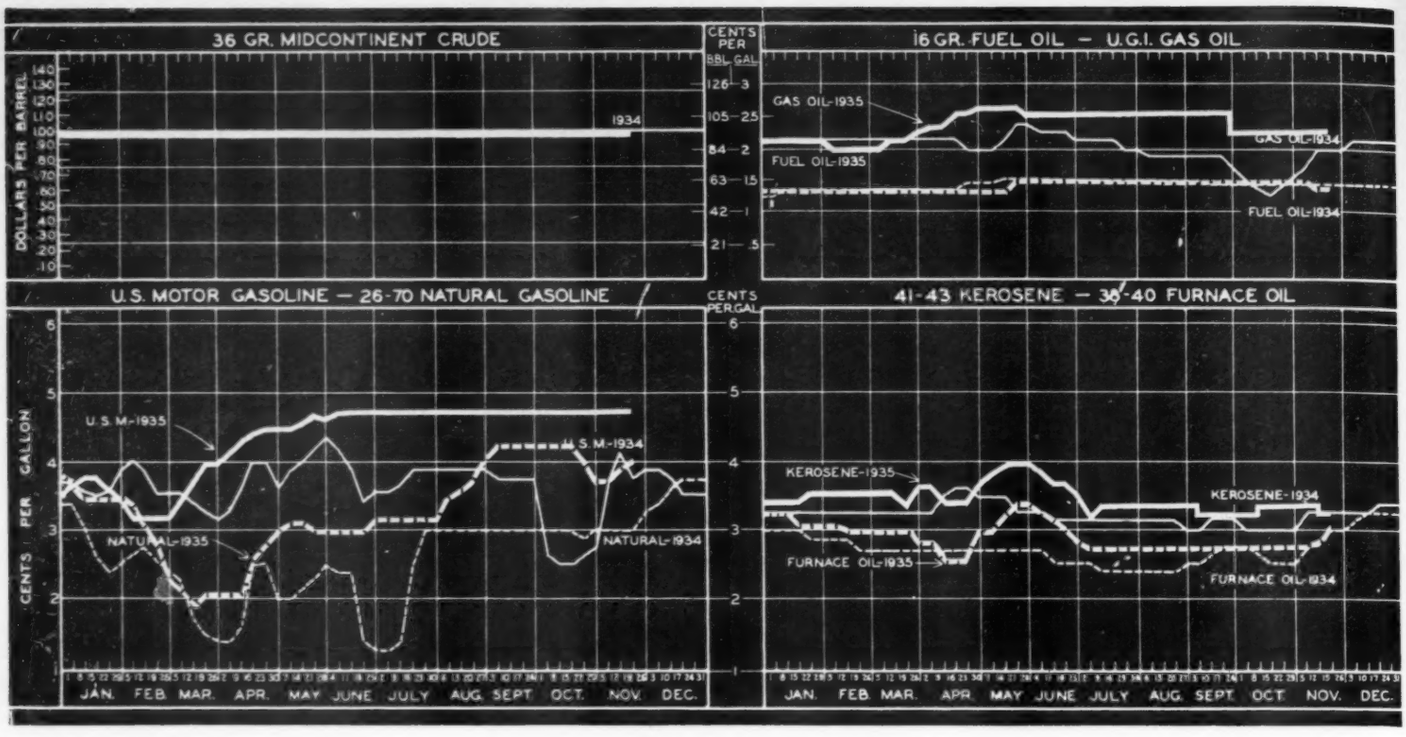
JOHN R. POLLARD, for several years with the Union Gas Company of Canada, Ltd., at Chatham, Ontario, has been transferred to the City Gas Company staff at London, Ontario.

W. F. THORNE, vice president and managing director of Franco Oils, Ltd., of Cardston, Alberta, has returned from a four months' trip to Denver, Salt Lake City and Pacific Coast points.

G. G. MORTIMER, operator in the Lopez field of Southwest Texas, left his home in San Antonio, Sunday, for a few days' visit in Tulsa. He is recovering from a severe automobile accident of a few weeks ago.

MARTIN W. STRONG, geological department, Anglo-Iranian Oil Company, Persia, and P. W. WRIGHT, chief engineer, with the same company, have been making an inspection tour of the oil fields of the Mid-Continent region and attended the A.P.I. annual meeting in Los Angeles, Calif., going to New York City from there and will sail for home shortly.

E. J. SADLER, director of the Standard Oil Company (New Jersey), New York, heads a group of officials and engineers of subsidiary companies which has been inspecting company properties and holding conferences with local officials. Other members of the party include F. W. ABRAMS, president of the Standard Oil Company of New Jersey (Delaware corporation), and J. C. HILTON, president of the Standard Oil Company of Louisiana.



Natural Gasoline Now Close to Refined Product in Group 3 Market Interest

By T. F. SMILEY

The tankcar motor fuel market was trudging along in businesslike fashion in the Group 3 area this week, indulging in no antics to attract the attention of bystanders, with the result that natural gasoline caught up to the refinery product in point of interest. Excluding inventories built up to take care of contract requirements, natural gasoline was actually scarce in Oklahoma; and supplies in Texas, though adequate and a little besides, were nothing to get alarmed about.

Quotations Up Another Eighth

Quotations for 26-70, which had risen an eighth a week earlier under the spur of active buying, repeated the performance, going to 4 cents as inquiries became still more urgent. Manufacturers and marketers in Oklahoma either refused to quote at all, explaining they were sold out, or else named prices which they knew would not be accepted. So far as could be ascertained, no actual sales were made above 4 cents. Notwithstanding tightness of the Oklahoma market, feeling in the trade seemed to be opposed to higher prices. Scarcely a month ago utterly unbalanced conditions prevailed as a result of prices going too high, and there is no disposition to repeat the experience.

Little of the 18-pound material was being sold. A few sales of 12-pound were reported, this grade going into competition with the third and middle grades of refinery gasoline. Export business, which had been slowed up by last month's high prices, was said to be resuming its normal proportions.

The Texas Panhandle, where casinghead plants were shut down last August in conformity with a Railroad Commission order and then reopened under court injunctions, continued to present an enigma this week. Plants in that area were still running, and feeling in the trade was that no definite disposition of the confused situation there was to be expected before the end of the year.

Rain and mud in various parts of Group 3's consuming area in the last week produced an abrupt decline in motor-fuel consumption, with consequent accumulation of unwieldy stocks here and there. Refiners with limited storage capacity in both Oklahoma and East Texas began looking about for relief and a few cases of price shading were reported. Substantial buying orders on the part of large integrated refiners caused excess inventories to melt and the opening of the current week revealed no reason for uneasiness.

The growing readiness of refiners to curtail their runs to help in preserving a balance between supply and demand is a subject of gratified comment in the Mid-Continent territory. Upon general willingness to take this action will depend the success of leaders among both large and small refiners in their efforts to maintain throughout the approaching winter the same stabilized market that has made the last six months so much more satisfactory from every point of view than the corresponding period in preceding years.

The fact that surplus supplies of gasoline have shown up in spots during the last few weeks is not regarded by observers as cause for concern so long as the refiner who owns such stocks evinces willingness to cooperate in preventing further surpluses. This is the season when a little difficulty in adjusting refinery runs to sharply reduced consumption is to be expected.

Fair Market in Heating Oils

Fair movement of heating oils was reported, although there has not yet been the brand of weather calculated to draw heavily on jobber stocks. Many jobbers have such small storage capacity that they are obliged to operate on pretty close to a day-to-day basis. There are enough of these jobbers in the aggregate to afford a spot business of substantial proportions. There is not likely to be much of a spot market outside of this type of demand until February, when the stocks of the larger jobbers will begin to need replenishing. Even then, however, purchases will be made warily to avoid entering the summer season with useless stocks of heating oils on hand.

Kerosene was soft, with prices displaying a drooping tendency. Jobbers who stocked up on lubricants while prices were low are getting near the tank bottoms again and are beginning to order at the prevailing quotations. Bright stocks and neutrals were firm. Wax was strong. Industrial fuels were sluggish and it was regarded as likely they would continue to be until cracking operations are renewed early next year.

Refined Oil Market Barometer

Motor fuel, passing through its annual period of transition from the season of highest to that of lowest consumption, is effecting the necessary adjustment with less market derangement than usual, owing largely to the growing spirit of cooperation manifested in voluntary curtailment of runs to stills. Notwithstanding inevitable seasonal irregularities, a fairly healthy tone pervades the general market.

MID-CONTINENT. Gasoline less vigorous. Naturals, lubricants firm. Kerosene, distillates easy.

EAST COAST. Furnace, diesel and gas oils up. Gasoline steady, with stocks unusually low.

GULF COAST. Gasoline steady. Kerosene strong. No price changes.

PENNSYLVANIA. General market displaying fairly steady tone; no changes in quotations.

CALIFORNIA. Gasoline unsettled. Fuel, diesel and gas oils continue strong.

CHICAGO. Gasoline slightly irregular. Heating oils in strong demand.

Gasoline Firm in Eastern Markets and Furnace, Diesel and Gas Oils Rise

By C. O. WILLSON

NEW YORK, Nov. 18.—A majority of the sellers of Nos. 2, 3 and 4 grades of furnace oils, diesel oils and gas oils the latter part of last week advanced their tank car and barge quotations one-fourth cent. These increases applied to the New York harbor and New England coastal points. In New York harbor the new tank car prices are 4¼ cents for Nos. 2 and 3 grades, shore plant diesel and gas oil and 4 cents for No. 4 furnace oil and industrial fuel. Barge prices are one-eighth to one-fourth cent under these tank car schedules.

Following the advances of the week previous, gasoline tank car quotations in this territory are steady with no indications that the higher prices are bringing additional material on the market. While there has been some decrease in actual consumption of motor fuels in this territory the tank car market is still tight at local refineries and water terminals and also the Gulf Coast from which a substantial part of the gasoline sold in this territory, originates. Sellers have been somewhat surprised by the continued steady demand for gasoline from jobbers, water terminal operators and the marketing divisions of their own companies. Sales heads of two major refining organizations in this territory said they were being offered more tank car business than they could handle. Their own regular customers are taking larger quantities than they anticipated for November and in addition they have inquiries from new concerns which apparently have not been able to obtain all the gasoline they needed from their regular suppliers.

Market Tight

The market appears particularly tight in the 65 octane and higher grades. The low posted price for this grade in New York harbor is 6½ cents with buyers reported willing to pay as high as 6¾ cents for 67 or 68 octane material.

The strength of the gasoline market is indicated in the fact that refiners as a group in this territory have not started their late fall and winter storage programs. Two refinery operators said their stocks had not been as low at this time of the year in several years. Their inventories are less than they consider their minimum working requirements. In most cases the operators entered the late summer season with plenty of gasoline on hand for their expected requirements. Their stocks at refineries and terminals declined rapidly in late July, August and September when total shipments jumped to more than 10 per cent over the same period last year. Crude runs to stills have been maintained at near their summer rate but so far operators are not accumulating supplies at their refineries. They are in some cases, however, adding to their bulk terminal stocks. Several of the larger refineries in this territory use inland waterways for transportation and it is their practice to stock up as heavily as possible in the areas served by these waterways so that when they are closed for the winter period they will have large supplies on hand. Due to this situation part of the present demand at refineries does not reflect actual consumption.

With this situation and foreign conditions in mind several market observers are urging caution in refinery operations pointing out that with the close of inland waterway shipments and reduced export business at the Gulf, gasoline stocks will start accumulating rapidly unless crude runs to stills are curtailed. They feel that the demand over the past few months based on refinery shipments has had its temporary aspects and they stress the desirability of curtailed plant operations over the next 90 days to prevent burdensome accumulations which have been the misfortune of the industry many times in the past, bringing lower rather than higher prices at the start of the main gasoline consuming season.

Some consider the export market potentially dangerous from the gasoline market end. There has been little new spot business over the past month. The regular contract movement continues heavy but there is no certainty that new orders will be placed when some of the business now on the books of sellers has been shipped. Part of the buying of the past several months has been due to war preparations and should the war suddenly end or an embargo placed on shipments to Italy, the foreign movement might be curtailed overnight. Other observers feel that the increased export movement reflects an actual gain in domestic consumption of many foreign countries and they contend that the present war demand—whether it continues or ends—is of minor importance.

Tanker Rates

The advance in distillate and gas oil prices previously mentioned was explained as partially or wholly due to higher tanker rates from the Gulf. As explained last week these rates have increased almost 100 per cent in recent months and 30 cents per barrel has been paid for tankers from the Gulf. The scracity is explained as due to the heavy demand for foreign shipments which have required more time than usual to make delivery, especially in the war area. In regard to coastal shipments, marine regulations are being enforced and overloading has stopped creating an additional demand for tankers.

It is believed that this situation will be of short duration. It is said that certain companies will shortly have tankers which they can take out of foreign service. It is also pointed out that additional tankers under the agreement of the International Tanker Owners Association can be released for service. Under this agreement a number of foreign tankers were withdrawn from service and their owners paid under a pooling arrangement from the revenues obtained from other tankers. The plan is to make available all the tankers that are actually needed to transport oil products but prevent owners from bein forced to offer boats at uneconomic rates.

Fuel Oils

It is now felt that prices for all grades of residual fuel oils will advance in this area provided the Gulf Coast market continues as tight as it has been for several weeks. Buyers state that sellers are not anxious to take on a large volume of business at present prices. The present Bunker C price of 95 cents and diesel fuel $1.65. An advance of 10 cents for Bunker C fuel has been suggested as probable before the end of the month. It is said that sellers have refused to consider business for delivery over the next 60 days at present prices.

The advance to 4¼ cents on gas oil comes at a time when the U.G.I. business is improving. Gas companies in this section have conducted summer campaigns to get home owners to use gas for furnace heating instead of oil or coal. In several cities and towns their campaigns have been highly successful. It is felt that this situation will be reflected in a heavy demand this winter which will include the products used in manufacturing the gas. Heavy fuels as well as gas oil are now being used in the manufacture of artificial gas in this territory.

Both Pennsylvania and western bright stocks and neutral oils are steady with No. 8 bright stocks (Pennsylvania) bringing 26 to 26½ cents in barrel to the foreign trade. Crude scale wax ranges from 2.20 to 2.30 cents per pound.

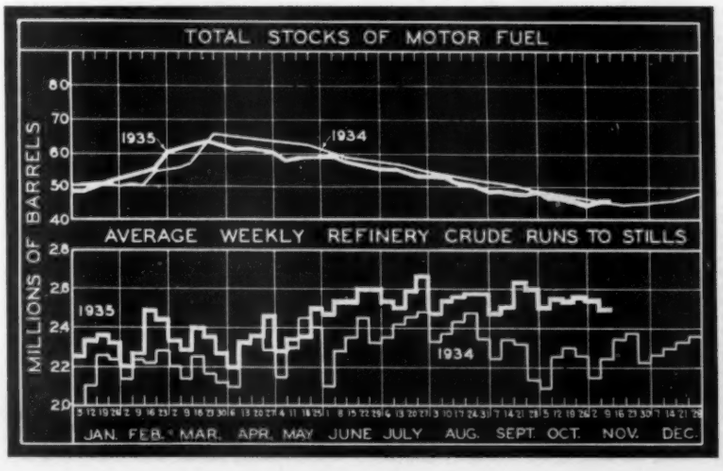
A. P. I. Weekly Refinery Statistics

Week Ending November 9, 1935

	Capacity reporting per cent	Daily crude runs (bbls.)	Total gasoline (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	476,000	12,479,000	12,457,000
Appalachian	94.8	104,000	2,062,000	963,000
Indiana, Illinois, Kentucky	95.9	359,000	7,685,000	4,079,000
Oklahoma, Kansas, Missouri	84.8	279,000	4,529,000	4,790,000
Inland Texas	48.5	91,000	1,250,000	1,606,000
Texas Gulf	96.4	509,000	6,335,000	11,511,000
Louisiana Gulf	96.4	126,000	1,353,000	4,864,000
North Louisiana and Arkansas	90.0	42,000	268,000	505,000
Rocky Mountains	61.9	36,000	682,000	798,000
California	92.6	484,000	9,188,000	65,935,000
Total United States	89.5	2,506,000	45,831,000	107,508,000

Stocks (barrels)—	Nov. 9, 1935	Nov. 10, 1934
Finished gasoline	40,780,000	40,812,000
Unfinished gasoline	5,051,000	4,639,000

NOTE: In addition to above there are stocks classified as "Stocks of Other Motor Fuel." These stocks total around 5,500,000 bbls. but show only minor changes and are not included in this weekly summary.



RETAIL OIL MARKETS

Tank wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of November 19, 1935

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon or 3 cents a gallon off retail prices is permitted for purchases between 4,000 and 10,000 gallons per month, or 4 cents a gallon off retail prices for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Standard Oil Co. (Indiana)

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Chicago	14.0	16.0	4.0	9.8
Decatur, Ill.	15.5	16.5	4.0	9.8
E. St. Louis	15.2	17.2	4.0	9.5
Joliet	15.5	16.0	4.0	9.8
Peoria	15.5	15.5	4.0	9.8
Quincy	15.2	17.3	4.0	8.0
Davenport, Ia.	15.5	(†)	4.0	9.8
Des Moines	15.3	(†)	4.0	9.6
Mason City	15.7	(†)	4.0	10.0
Sioux City	15.5	(†)	4.0	9.8
Duluth, Minn.	16.3	18.3	4.0	10.6
Mankato	15.9	17.9	4.0	10.2
Minneapolis	15.9	17.9	4.0	10.2
LaCrosse, Wis.	16.9	18.9	5.0	10.2
Green Bay	17.2	19.2	5.0	10.5
Milwaukee	15.3	16.8	5.0	10.1
Madison	16.9	18.9	5.0	10.2
Detroit, Mich.	13.5	15.5	4.0	9.3
Grand Rapids	15.6	16.6	4.0	8.0
Saginaw	16.1	18.1	4.0	9.3
Evansville, Ind.	17.2	19.2	5.0	10.3
Indianapolis	17.4	19.4	5.0	10.5
South Bend	17.6	19.6	5.0	12.0
Fargo, N. Dak.	16.9	18.9	4.0	11.2
Huron, S. Dak.	17.4	19.4	5.0	10.7
Sioux Falls	16.9	18.9	5.0	10.2
Kan. City, Mo.*	12.9	14.9	4.0	7.0
Springfield	14.6	16.6	4.0	8.9
St. Louis	15.2	17.2	3.5	9.5
St. Joseph*	14.9	16.9	4.0	9.2
Wichita, Kans.	14.4	16.4	4.0	6.8
Bartlesville, Okla.	16.0	18.0	5.0	8.8

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

†Standard Oil Co. (Indiana) has leased all service stations in Iowa.

Discounts to dealers: Undivided accounts, 1½ cents on premium and regular and 2½ cents on third grade off service station prices; divided accounts one-half cent less than undivided. Discounts to dealers in metropolitan Chicago one-half cent larger than rest of Standard of Indiana territory, namely 4 cents and 3 cents on respective grades. Where prices are more than 1 cent below normal, the discounts are one-half cent less than above.

Stanolax Furnace Oil in Chicago

Effective June 27, 1935, f.o.b. Chicago tank wagon prices: Range oil, less than 100 gallons, 8.5 cents; 100-149 gallons, 7.5 cents; 150 gallons and more, 7.0 cents. No. 1 (36-40 lt. stw. zero), less than 100 gallons, 8.5 cents; 100-149 gallons, 7.5 cents; 150 gallons or more, 7.0 cents; No. 2 (30-34, stw. zero), same prices and quantities as No. 1; No. 3 (22-26, zero), less than 150 gallons, 7.2 cents; 150 gallons or more, 6.2 cents. No. 4 (12-16 zero), less than 400 gallons, 7.2 cents; 400 gallons or more, 6.2 cents, viscosity of No. 4, 35° and 100° F.; No. 5, less than 400 gallons, 5½ cents; 400 gallons or more 4½ cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Denver, Colo.	18.0	20.0	5.0	11.0
Pueblo	18.0	20.0	5.0	13.0
Grand Junction	20.5	22.5	5.0	15.0
Casper, Wyo.	18.5	20.5	5.0	11.5
Cheyenne	18.5	20.5	5.0	13.0
Butte, Mont.	21.0	23.0	5.0	17.5
Billings	19.5	21.5	5.0	16.5
Helena	21.5	23.5	5.0	17.5
Great Falls	20.5	23.5	5.0	17.5
Salt Lake, Utah	18.0	20.0	5.0	16.0
Twin Falls, Ida.	23.0	25.0	6.5	18.0
Boise	22.5	24.5	6.0	18.0
Albuquerque, N. M.	20.0	22.0	*5.5	13.0

*One-half cent city tax.

Discount to dealers with or without contract in Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Atlanta, Ga.	20.0	22.0	7.0	12.0
Augusta	20.0	22.0	7.0	14.0
Macon	20.0	22.0	7.0	12.0
Savannah	18.0	20.0	7.0	14.0
Birm'ham, Ala.	21.0	23.0	8.0	12.0
Mobile	19.0	21.0	8.0	10.0
Montgomery	22.0	24.0	8.0	15.5
Jackson, Miss.	19.0	21.0	7.0	11.0
Vicksburg	19.0	21.0	7.0	12.0
Jacksonville, Fla.	18.5	20.5	8.0	10.0
Miami	18.5	20.5	8.0	13.5
Pensacola	19.0	20.0	8.0	11.5
Tampa	18.5	20.5	8.0	11.0
Lexington, Ky.	19.5	21.5	6.0	10.0
Covington	18.0	20.0	6.0	11.5
Louisville	18.5	20.5	6.0	10.0
Paducah	18.5	20.5	6.0	10.0

In addition to the state tax of 6 cents Montgomery, Ala., has a county tax of 1 cent per gallon and a city tax of 1 cent per gallon on gasoline, and one-half cent per gallon on kerosene. Mobile and Birmingham, Ala., each have a city gasoline tax of 1 cent per gallon. Pensacola, Ala., has a city gasoline tax of 1 cent.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Dallas, Tex.	15.0	17.0	5.0	7.0
Fort Worth	15.0	17.0	5.0	7.0
Houston	16.0	18.0	5.0	8.0
San Antonio	16.0	18.0	5.0	8.0
El Paso	17.0	19.0	5.0	10.0
Muskogee, Okla.	16.0	18.0	5.0	8.0
Okla. City	16.0	18.0	5.0	8.0
Tulsa	16.0	18.0	5.0	8.0
Ft. Smith, Ark.	14.5	18.0	5.0	8.0
Little Rock	17.0	20.5	7.5	9.5
Texarkana	15.5	17.5	5.0	7.0

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Atl'tic City, N. J.	13.5	17.0	4.0	9.0
Newark	13.5	17.0	4.0	7.5
Annapolis, Md.	14.8	18.3	5.0	10.0
Baltimore	14.3	17.8	5.0	7.5
Cumberland	15.8	19.3	5.0	12.7
Wash'g'n, D. C.	12.5	16.0	3.0	9.0
Danville, Va.	16.6	20.1	6.0	12.9
Norfolk	15.1	18.6	6.0	11.2
Petersburg	15.8	19.3	6.0	11.7
Richmond	15.8	19.3	6.0	11.7
Roanoke	16.6	20.3	6.0	12.9
Charles'n, W. Va.	15.0	18.5	5.0	12.6
Parkersburg	14.3	17.8	5.0	11.2
Wheeling	15.5	19.0	5.0	12.2
Charlotte, N. C.	17.9	21.4	7.0	12.9
Hickory	18.2	21.7	7.0	13.1
Mt. Airy	18.2	21.7	7.0	13.2
Raleigh	17.6	21.1	7.0	12.7
Salisbury	18.0	21.5	7.0	13.0
Charleston, S. C.	16.2	19.7	7.0	11.3
Columbia	17.5	21.0	7.0	12.6
Spartanburg	17.9	21.4	7.0	12.9

Tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount (if necessary) is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Omaha	16.9	18.9	5.0	10.1
McCook	17.6	19.6	5.0	10.8
Norfolk	17.3	19.3	5.0	10.5
North Platte	17.7	19.7	5.0	10.9
Scottsbluff	18.4	20.4	5.0	11.6

Note: Discounts to dealers; where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 2½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank wagon deliveries covered only by Standard Commercial Consumers Contract, effective January 1, 1935.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Ohio points	17.0	19.0	5.0	*12.5

*Includes state tax of 1 cent.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Philadelphia, Pa.	16.0	18.0	5.0	9.0
Pittsburgh	17.0	19.0	5.0	10.0
Allentown	16.5	18.5	5.0	9.0
Erie	16.0	18.0	5.0	8.0
Scranton	16.5	18.5	5.0	10.0
Altoona	17.0	19.0	5.0	9.0
Dover, Del	16.5	18.5	5.0	10.0
Wilmington	14.0	14.0	5.0	9.0
Springf'd, Mass.	13.5	17.0	4.0	7.25
Worcester	13.5	17.0	4.0	7.5
Hartford, Conn.	12.5	16.0	3.0	6.75
New Haven	12.5	16.0	3.0	6.75
Providence, R. I.	12.5	14.0	3.0	7.0

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
N. Orleans, La.	17.5	21.0	‡8.0	12.0
Baton Rouge	16.5	20.0	†7.0	11.5
Alexandria	17.5	21.0	†*8.0	10.5
Lafayette	18.0	21.5	‡*8.0	12.5
Lake Charles	18.0	21.5	†*8.0	†11.0
Shreveport	16.0	19.5	†7.0	9.0
Knoxville, Tenn.	20.5	24.0	8.0	14.0
Memphis	18.5	22.0	8.0	9.5
Chattanooga	20.0	23.5	8.0	11.5
Nashville	19.5	23.0	8.0	10.0
Bristol	18.35	21.1	8.0	14.5

*Includes city tax of 1 cent.

†Includes 1-cent parish tax. ‡Includes 2-cent parish tax.

Tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

New York and New England

SOCONY-VACUUM CO., INC.

	Gasoline: Post deal	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Albany, N. Y.	14.5	18.0	5.0	7.5
*Met. New York	15.25	19.5	5.0	7.0
*Br'kl'n, Queens	15.0	19.0	5.0	7.0
Buffalo	12.0	14.0	5.0	8.0
Rochester	14.0	17.0	5.0	8.0
Syracuse	13.5	16.0	5.0	8.5
Boston, Mass.	13.5	17.0	4.0	6.75
Portland, Me.	15.0	18.5	5.0	7.5
Manch'ter, N. H.	15.0	18.5	5.0	7.75
Burlington, Vt.	16.5	20.0	5.0	8.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
San Francisco	13.5	15.5	4.0	10.0
Los Angeles	13.0	15.0	4.0	10.5
Fresno, Calif.	14.0	16.0	4.0	9.0
Phoenix, Ariz.	17.5	19.5	6.0	‡16.0
Reno, Nev.	16.5	18.5	5.0	13.0
Portland, Ore.	16.5	18.5	6.0	13.5
Seattle, Wash.	16.5	18.5	6.0	13.5
Tacoma	16.5	18.5	6.0	13.5
Spokane	19.5	21.5	6.0	16.5

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where discount is 1 cent.

‡Includes 5-cent state tax.

Canada*

Imperial 3-Star Gasoline

IMPERIAL OIL, LTD.

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Hamilton, Ont.	21.0	23.5	6.0	16.5
Toronto, Ont.	21.0	23.5	6.0	16.5
Brandon, Man.	30.3	33.3	7.0	21.8
Winnipeg, Man.	28.7	31.7	7.0	20.3
Regina, Sask.	30.0	33.0	7.0	21.5
Saskatoon, Sask.	32.8	35.8	7.0	24.3
Edmonton, Alta.	32.2	35.2	7.0	23.7
Calgary, Alta.	29.5	32.5	7.0	21.0
Vancouver, B. C.	24.5	27.5	7.0	24.0
Montreal, Que.	20.5	23.0	6.0	17.0
St. John, N. B.	26.0	30.0	8.0	19.5
Halifax, N. S.	26.0	30.0	8.0	19.5

*Imperial gallon used in Canada.

In maritime provinces all dealers get 4 cents off service station price. In all other provinces open dealers get 3 cents off service station price and 1 cent additional to 100 per cent accounts, except Montreal City, Hamilton and Toronto, where open dealers get 2½ cents off service station price with 1 cent additional to 100 per cent accounts.

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Retail Price Changes

Atlantic Refining Co. November 8 advanced tank-wagon and station gasoline .3 cent and reduced tank-wagon kerosene .25 cent in Springfield; advanced tank-wagon gasoline .2 cent and station gasoline .5 cent in Worchester; advanced tank-wagon and station gasoline .2 cent in Hartford; advanced tank-wagon and station gasoline .3 cent in New Haven; reduced tank-wagon kerosene .25 cent in Hartford and .75 cent in New Haven; and advanced tank-wagon and station gasoline .5 cent in Providence. October 29 reduced tank-wagon gasoline 2 cents and station gasoline 4 cents in Wilmington.

Magnolia Petroleum Co. November 13 reduced tank wagon kerosene 1 cent in Texarkana.

Socony-Vacuum Oil Co., Inc., November 7 advanced posted dealer and station gasoline from .1 to .8 cent in New England states and part of New York state; November 8 advanced .2 cent in New York City and .5 cent in Boston.

Chicago Markets

CHICAGO, Nov. 18.—A certain degree of irregularity developed the past week in the tank-car gasoline market here, based on increased offerings of East Texas gasoline to the marketing trade. Interrefiner buying at the latest report was being extended to take up this slack, and indications were that this material was being absorbed.

In the meantime trade buyers were watching not only their spot purchases, but their contract orders as well, in order to keep their stocks down to a low level.

More emphasis is being placed on regular-grade gasoline than ever before, in connection with new cars.

Tank-wagon and service-station prices are still irregular and unsettled. This is particularly true in Detroit, Chicago and other large cities. In Chicago, another reduction in tank wagon price of fourth-grade (commercial consumer grade) gasoline was made as of November 15, this one being of three-tenths cent to a new low price of 11.7 cents.

PRICES ON REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of November 19, 1935

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:

Below 63 octane	.04¾	.04¾
63-70 octane	.05¾	.05¾
60-62 400 grade:		
Below 63 octane	.04¾	.04¾
63-70 octane	.05¾	.05¾
64-66 375	.04¾	.05
68-70 360	.05	.05½

NORTH TEXAS—

U. S. Motor grades:

Below 63 octane		.04¾
63-70 octane		.05¾
60-62 400	.04¾	.04¾
64-66 375	.04¾	.05

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:

Below 63 octane	.05½
63-70 octane	.06¼
60-62 400	.05½

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:

Below 63 octane	.05½
63-70 octane	.06¼

CHICAGO (based on Group 3)—

U. S. Motor grades:

Below 63 octane	.04¾	.04¾
63-70 octane	.05¾	.05¾
60-62 400	.04¾	.04¾
64-66 375	.04¾	.05
68-70 360	.05	.05¼
Aviation fighting grade	.05¾	.06

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05¼
60-64.9 octane		.06¾
65-70 octane		.07
64-66 375		.05½
68-70 350		.05¾

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.05	.06
58-60 400	.05¾	.06½

EAST COAST—

U. S. Motor, below 60 octane:		
*New York (Bayonne)	.06	.06¼
Baltimore		.05¾
U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)		.06¼
Philadelphia		.06
Boston		.06
Baltimore		.06
Charleston, S. C.		.06
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.06¾
Philadelphia		.06¼
Boston		.06¼
Baltimore		.06¼
Charleston, S. C.		.06¼

*All grades of gasoline one-fourth cent less for barge shipments.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane		.05
60-64.9 octane	.05¼	.05½
65 octane and higher		.05½

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.05½
52-54 450 (blending)	.05½
54-56 450 (blending)	.05¼

CHICAGO (based on Group 3)—

50-52 450 (blending)	.04¾	.05
Cleaners' naphtha, 56-58 gr., 200 i.b.p., 20 e.p.	.06¾	.07
Lacquer diluent, 180 i.b.p., 250 e.p.	.07¾	.08
Lacquer diluent, 140 i.b.p., 200 e.p.	.08¾	.09
Rubber solvent, 68-70 gr., 100 i.b.p., 300 e.p.	.06¾	.07
Stoddard solvent, 300 i.b.p., 410 e.p., over 83° flash	.06½	.06½
Pet. thinner, 200-300 i.b.p., 410 e.p., over 83° flash	.06½	.06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p., 330° e.p.	.06¾	.07
Petroleum spirits	.05¾	.06

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.04
Grade 18-55	.04¾	.05
Low vapor pressure grade:		
*14 lb. v.p. (max.)	.05¼	.05¾
*12 lb. v.p. (max.)	.05¼	.05¾

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.04¼

NORTH TEXAS—

Grade 26-70	.03¾
Grade 18-55	.04½ .04¾
*14 lb. v.p. (max.)	.04¾ .05¼
*12 lb. v.p. (max.)	.05¼ .05½

CALIFORNIA—

75-85 375-390	.04½ .05½

*Nominal.

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03¼ .03½
42-44	.03⅜ .03½

NORTH TEXAS—

41-43	.03¼ .03½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.03¾

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04¼

PENNSYLVANIA (inland refineries)—

45	.04¾
46	.04¾
47	.05

CHICAGO (based on Group 3)—

41-43	.03⅜ .03½
42-44	.03½ .03⅝

CALIFORNIA (Pac. Coast market)—

38-40 high burning test	.04¾ .05

NEW YORK (Bayonne, N. J.)—

*41-43	.05

GULF COAST (domestic)—

41-43	.04¼ .04½

*Barge price one-eighth cent lower.

Petroleum Coke

(Prices per ton f.o.b. Chicago area. Refineries absorb freight to 80 cents a ton.)

Pile run	6.25
Direct from still	7.25
Egg, nut, pea	8.00
Lump	8.75

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.03¼	.03¼
No. 1 straw, 38-40	.03	.03¼
No. 2 straw, 32-36	.02¾	.03⅛
No. 2 dark, 32-36	.02⅞	.03
No. 3, 28-32	.02⅜	.02⅝
No. 3, 15 and above, 28-32	.02½	.02⅝

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅛	.03⅜
No. 1 straw, 38-40	.03	.03⅛

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03⅛	.03¼

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03½
No. 3, 28-32	.03¼

CHICAGO (based on Group 3)—

No. 1 prime white, 38-40	.03⅛	.03⅜
No. 1 straw, 38-40	.03	.03⅛
No. 2 straw, 32-36	.03	.03⅛
No. 2 dark, 32-36	.02⅝	.02⅞
No. 3, zero to 15, 28-32	.02⅝	.02⅞
No. 3, 15 and above, 28-32	.02¼	.02½

NEW YORK (Bayonne, N. J.)—

*No. 1	.04⅞	.05
*No. 2		.04¼
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tank car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¼	.02⅝
No. 4, 24-28	.87½	.90
No. 4, 15 and above, 24-28	.75	.80
No. 5	.70	.75
No. 6	.65	.67½
Below 18 fuel oil, industrial	.60	.65

NORTH TEXAS—

U.G.I. gas oil	.02¼	.02¼
No. 4, 24-28	.87½	.90
No. 5	.70	.75
No. 6	.65	.67½
Below 18 fuel oil, industrial	.60	.65

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U.G.I. gas oil	.02⅝	.03
10-14 fuel oil, industrial	.75	.80

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.60	.65

CHICAGO (based on Group 3)—

U.G.I. gas oil	.02¼	.02⅜
No. 4, 24-28	.87½	.90
No. 4, 15 and above, 24-28	.72⅛	.77½
No. 5, 18-22	.63¾	.67½
No. 6, 10-16	.52½	.55

Fuel oils of more than 40 cold test generally 5 to 15 cents per bbl. in these areas.

PENNSYLVANIA (inland refineries)—

36-40	.04½	.04¼

CALIFORNIA—

Los Angeles:

30-34 gas oil, per bbl.	1.05	1.25
27 plus Diesel	1.05	1.25
27 plus Diesel (bunkers)	1.25	1.30
12-16 (bunkers at tidewater)	.87	.95
10-16 (cargo lots)	.75	.92½
12-17 (tank cars)	.65	.95
San Joaquin Valley:		
10-18 (tank cars)	.60	.75
San Francisco:		
27 plus Diesel, per bbl.		1.25
27 plus Diesel (bunkers)		1.35
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03¼
28-30 Diesel (bunkers)	1.70
Bunker C (bulk cargoes)	.70
Bunker C (bunkers)	.80

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.04¼
28-30 Diesel (lighterage 6½ plus per bbl.)	1.65
28-30 Diesel (tank cars)	.04¼
*Bunker C (to ocean-going ships in N. Y. harbor)	.95
Industrial fuel (tank cars)	.04

*Lighterage charge 5c bbl. additional.

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.P.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:

150-3	.10
180-3	.11¼
180-4	.10¾
200-3	.11¾
200-4	.11¼
240-3	.13¾
240-4	.13¼
280-3	.14¾
280-4	.14
300-3½	.15¼
400-3½	.16
100-2 paraffin oil	.05¾

15-20 Cold Test:

200-3	.10¾
200-4	.10¼
240-3	.12¾
240-4	.12¼
280-3	.13¾
280-4	.13

GULF COAST—

Pale Oils:

200-3	.07	.07½
300-3	.07½	.08
500-3½	.08½	.09
750-3½	.09	.09¼
1,200-3½	.09½	.09¾
2,000-4	.09¾	.10

Red Oils:

200-5-6	.07	.07¼
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08½	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:

100-2½-3	.07	.07¼
200-2½-3	.07½	.07¾
300-3-3½	.08	.08¼
350-3-4	.09	.09¼
400-3-4	.09⅜	.09⅝
450-3-4	.10	.10¼
550-3-4	.10¼	.10⅝
600-3-4	.10½	.10⅝

Red Oils:

200-4-5	.07	.07¼
300-5-6	.07⅜	.07⅝
350-5-6	.08¼	.08⅝
400-5-6	.09	.09¼
450-5-6	.09¼	.09¾
500-5-6	.09⅜	.09⅝
600-5-6½	.10	.10¼
700-6½ plus	.10¼	.10⅝
750-6½ plus	.10⅜	.10⅝
900-6½ plus	.10⅝	.11

PENNSYLVANIA—

150 vis. at 70° F., color, 400-405 flash:

Zero pour test	.21	.21½
10 pour test	.20	.20½
15 pour test	.19½	.20
25 pour test	.18½	.19
180 vis. at 70° F., 3 color:		
25 pour test	.21	.21½
200 vis. at 70° F., 3 color:		
Zero pour test	.25½	.26
10 pour test	.24½	.25
15 pour test	.24	.24½
25 pour test	.23	.23½

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:

190-200 D, 15-25	20.
150-160 D, 0-10	.17
150-160 D, 15-25	.16½
150-160 E, 15-25	.16
100-110 D, 0-10	.15¾

Steam refined:

630 green (treated)	.09½
600 light green, untreated	.08½
600 dark green, untreated	.05 .06

PENNSYLVANIA—

Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 510; 540-550 flash):

10 pour test	.22	.22½
15 pour test	.21	.21½
20 pour test	.20	.20½
25 pour test	.19	.19½

Steam refined:

600	.09½	.10
650	.11	.11½
600 Pennsylvania flash	.12	.12½
630 flash	.17	.17½
600 Warren E filtered	.13	.13½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¼	.02½

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0235	.0240
124-126 (a.m.p.) w.c. scale	.0235	.0240

NEW YORK—

Wax in bags fully refined:

123-125 (a.m.p.) wax		.0420
125-127 (a.m.p.) wax		.0430
128-130 (a.m.p.) wax		.0455
130-132 (a.m.p.) wax		.0480
133-135 (a.m.p.) wax		.0510
135-137 (a.m.p.) wax		.0565
124-126 (a.m.p.) w.s.		.0225
124-126 (a.m.p.) y.s.	.0220	.0225

Petrolatum in barrels, carload lots:

Dark green		.01⅞
Amber	.02⅜	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07⅜	.07⅝
Cream	.05⅝	.05¾

CHICAGO (f.o.b. switching district; carload lots in bags, add 3° for a.m.p.)

122-124 (a.s.t.m.) wax	.0440	.0450
125-127 (a.s.t.m.) wax	.0465	.0475
127-129 (a.s.t.m.) wax	.0480	.0490
*130-132 (a.s.t.m.) wax	.0520	.0530
*132-134 (a.s.t.m.) wax	.0545	.0555

*For wax shipped in bulk or bag.

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05¼
60-62 400	.05¼	.05¼
61-63 390		.05¼
64-66 375	.05¾	.05½

LOS ANGELES—

U. S. Motor grades:

53-55 octane		.04
55-65 octane	.04	.04½
65-67 octane	.04½	.04½
67-69 octane	.04½	.04¾
Above 69 octane	.04¾	.05
58-60 400 endpoint	.04½	.05

KEROSENE

GULF COAST—

41-43 prime white		.03⅜
41-43 water white	.03⅜	.04
44 water white		.04¼

LOS ANGELES—

41-43 water white	.04¼	.04¾

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:

600 Warren E	.19½	.20
600 S.R. unfiltered		.16½
650 S.R. unfiltered	.17½	.18
600 flash S.R.	.18½	.19
630 flash S.R.	.23	.24

Bright Stocks:

8 color	.26	.26½
6½ plus colors in dilution		.25½

NEUTRAL OIL

200-3 color	.29½
150-3 color	.25

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.	.035	.03625
125-127 a.m.p.	.03625	.0375
128-130 a.m.p.	.03875	.0400
130-132 a.m.p.	.04125	.04250
133-135 a.m.p.	.04625	.04750
135-137 a.m.p.	.04875	.0500
Crude scale:		
124-126 w.s.	.0220	.0225
124-126 y.s.		.0220

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

Corsicana (heavy) (June 17, 1933)	.80
East Texas	$1.00
Other fields (See gravity table)	

West Texas

Crane Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933)	$ .70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933)	.75
Pecos County, Yates shallow Pool (Sept. 29, 1933)*	.65
Jones and Fisher Counties* (See gravity table)	

Rocky Mountain States

Iles, light (Sept. 29, 1933)	$ .96
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.90
Fort Collins and Wellington, Colo., (June 17) (See Salt Creek prices)	
Big Muddy (Sept. 29, 1933)	$1.01
Frannie, light (May 1, 1934)	.70
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 29, 1933) (See Stanolind Mid-Continent price schedule)	
Grass Creek, light (Sept. 29, 1933)	$1.18
Grass Creek, heavy (Sept. 29, 1933)	.62
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Lance Creek (Dec. 16, 1932)	.92
Hudson (June 2, 1931)	.65
Lost Soldier (Sept. 30, 1933)	.85
Hamilton Dome, all grades (Feb. 16, 1935)	.57
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pendera (Sept. 29, 1933)	1.25
Sunburst (July 19, 1935)	1.20
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)	.75

Gulf Coast

Grade A and Grade B specification discontinued by leading buyers. (See gravity table)	
Hardin (Aug. 8, 1935)	$.93
Tomball (see note)*	1.15
Livingston (Sept. 29, 1933)†	1.00
Cleveland (Jan. 11, 1934)	1.00
Greta (June 29, 1935)	.80
Refugio, light (See gravity table)	
Refugio, heavy (June 29, 1935)‡	.80
Conroe (See Conroe gravity table)	
Markham and High Island (See Gulf Coast gravity table)	
Bosca, La. (Jan. 18, 1935)§	$.90

Anahuac and Dickinson posted by Humble August 20, 1935, price of 94 cents per barrel on 30-30.9 gravity with 2 cents per degree increase with top 40 gravity $1.14.

Note—Tomball, effective September 29, by Humble Oil & Refining Co. and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Crude Oil Purchasing Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy by Humble Oil & Refining Co. Cleveland and Hardin posted by Magnolia Petroleum Co. §Bosco posted by Pure Oil Co.

Middle Western States

OHIO OIL CO.

Lima (Feb. 1, 1935)	$1.15
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shut in
Midland, Mich. (Nov. 7, 1935)*	1.13
West Branch, Mich. (Nov. 7, 1935)	.96
Ogemaw, Mich.	.96
Somerset, Ky. (May 20, 1935)	1.13
Western Kentucky (May 22, 1935)	1.13

*Posted by Pure Oil Co., Simrall Pipe Line Co. and Producers Pipe Line Co. Ogemaw and West Branch, Mich., posted by Simrall Pipe Line Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted prices includes premium. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$ .70
Tullos, Urania, La. (Jan. 13, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Converse, La. (Mar. 17, 1934)	1.03
Elm Grove, La. (Sept. 29, 1933)	.75
Holly, La. (Nov. 17, 1934)	1.03
Pleasant Hill, La. (Mar. 17, 1934)	1.03
Zwolle, La. (Mar. 17, 1934)	1.03
Champagnolle, Ark. (Mar. 17, 1934)	.81
Lisbon, Ark. (Mar. 17, 1934)	1.03
Stephens, Ark. (Sept. 29, 1933)	.70
Urbana, Ark. (Mar. 17, 1934)	.60
Other fields (See gravity table)	

South Central and Southwest Texas

Darst Creek	$ .87
Mirando (June 29, 1935)	.75
Luling (Sept. 29, 1933)	.75
Pettus	1.05
Salt Flat	.87
Lytton Springs (Sept. 29, 1933)	.95
Duval County (June 29, 1935)	.75
Saxet (June 29, 1935)	.80
Port Lavaca (July 1, 1935)	.80

Eastern States

TIDE WATER PIPE CO.
(Effective Oct. 29, 1935)

Bradford, Pa.	$2.15
Allegany, N. Y.	2.15

SOUTH PENN OIL CO.
(Effective Oct. 29, 1935)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.15
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.87
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.82
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.87
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.82

PENNZOIL CO.
(Effective Oct. 29, 1935)

Pennsylvania Grade Oil in National Transit Lines:	
Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.)	$2.12
Group B (Includes Titusville district.)	2.11
Group C (Includes Turkey and Tidioute districts.)	2.10
Group D (Includes Bear Creek and Porkey districts.)	2.09
Group E (Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacey and Kinzua districts.)	2.06
Price depends on length of pipe line haul to plant at Oil City.	

PURE OIL CO.
(Effective Oct. 29, 1935)

Cabin Creek, W. Va.	$1.82
Bradford Hollow, W. Va.	1.82
Kelly Creek, W. Va.	1.82

Canada

Ontario (Sept. 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (May 21, 1934):†	
Clear naphtha	2.55
Discolored naphtha	2.37
Crude oil, 50 gravity	2.19
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.99

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$.85

*F.o.b. ship, based on October transactions and exclusive of production and export taxes and bar dues.

Crude Prices by Gravities

Gravity—	1 Oklahoma and Kansas	2 North Texas, Central Texas and East Central Texas	3 North Louisiana and Arkansas	4 Gray County, Texas	5 Carson, Hutchinson and Moore Counties, Texas	6 Conroe, Texas	7 Salt Creek, Wyo.	8 Gulf Coast, Texas and Louisiana	9 Gulf Coast, Texas and Louisiana	10 Cotton Valley, Louisiana
Below 20	....	....	....	....	....	....	....	$.82	$.82	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.06	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.08	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	1.02

James Maxwell, Jr., for the past 12 years in the lease and land department of the Continental Oil Co. with headquarters in the Wichita Falls, Tex., district, has been transferred to the West Texas and New Mexico division with headquarters at Midland, Tex. He will be succeeded by John Cram, formerly at Midland, who is transferred to Wichita Falls.

C. A. P. Southwell, head of the fields branch, Anglo-Iranian Oil Company, has left London, England, for Iran.

G. H. Coxon, head of the refining and technical branch, Anglo-Iranian Oil Company, has left London, England, for Iran.

STANDARD OIL CO. OF CALIFORNIA

Effective November 1, 1935, and met by all other purchasers. (Ventura Avenue posted by Associated Oil Co.; Shiells Canyon and South Mountain by The Texas Co. and Rincon by General Petroleum Corp.) All gravities above those posted take highest posted price in the field.

Gravity—	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canon	Athens, Rosecrans Domingues	Elwood Terrace	Torrance	Richfield	Kettleman Hills	Whittier, La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall, McKittrick, Kern River	Mountain View	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge	Ventura Avenue	Shiells Canyon, South Mountain	Rincon
14-14.9	$ .75	$ .74	$ .73	$ .74	$ .75	$ .71	....	....	$ .75	$ .71	....	$ .71	$ .72	$ .72	....	$ .65	....	$ .65	$ .65	$ .65	....	....	$ .65	....
15-15.9	.75	.74	.73	.74	.75	.71	....	....	.75	.71	....	.71	.72	.72	....	.65	....	.65	.65	.65	....	....	.65	....
16-16.9	.75	.74	.73	.74	.75	.71	....	....	.75	.71	....	.71	.72	.72	....	.65	....	.65	.65	.65	....	....	.65	....
17-17.9	.75	.74	.73	.74	.75	.71	....	....	.75	.71	....	.71	.72	.72	....	.65	....	.65	.65	.65	....	....	.65	....
18-18.9	.75	.74	.73	.74	.75	.71	....	....	.75	.71	....	.71	.72	.72	....	.65	....	.65	.65	.65	....	....	.65	....
19-19.9	.75	.74	.73	.74	.75	.71	....	....	.75	.71	....	.71	.72	.72	....	.65	$ .65	.65	.65	.65	$ .65	....	.65	....
20-20.9	.75	.74	.73	.74	.75	.71	....	....	.75	.71	....	.71	.72	.72	....	....	.65	.65	.65	.65	.65	....	.66	....
21-21.9	.75	.74	.73	.74	.75	.71	....	....	.75	.71	....	.71	.72	.72	$ .73	....	.65	.66	.67	.65	.65	....	.67	....
22-22.9	.75	.74	.73	.75	.78	.72	....	....	.75	.71	....	.71	.72	.72	.72	....	.65	.67	.68	.66	.65	$ .68	.68	$ .64
23-23.9	.75	.74	.74	.76	.79	.73	$ .75	....	.76	.71	....	.72	.73	.72	.73	....	.65	.69	.70	.67	.65	.68	.69	.64
24-24.9	.77	.74	.75	.77	.81	.74	.75	....	.77	.72	....	.74	.74	.73	.73	....	.65	.71	.71	.69	.65	.70	.70	.66
25-25.9	.78	.75	.76	.78	.82	.75	.76	....	.78	.73	....	....	.75	.74	.73	....	.66	.72	.73	.70	.66	.71	.71	.67
26-26.9	.79	.76	.78	.79	.83	.76	.77	....	.79	.74	....	....	.76	.75	.73	....	.67	.74	.74	....	....	.72	.72	.68
27-27.9	.80	.78	.79	.80	....	.77	.79	....	....	.75	....	....	....	.77	.74	....	.68	.76	.76	....	....	.73	.73	.69
28-28.9	.81	.79	.80	.81	....	.79	.80	....	....	.76	....	....	....	.78	.75	....	.70	.77	.77	....	....	.74	.74	.70
29-29.9	.82	.81	.81	.82	....	....	.82	....	....	.78	....	....	....	.79	.77	....	.71	.79	.78	....	....	.75	.75	.71
30-30.9	.83	.83	.82	.83	....	....	.83	....	....	....	....	....	....	.80	.78	....	.72	.81	.80	....	....	.76	.76	.72
31-31.9	....	....	....	.84	....	....	.84	....	....	....	....	....	....	.81	.79	....	.74	.83	....	....	....	....	.77	....
32-32.9	....	....	....	.85	....	....	.86	....	....	....	....	....	....	.82	.81	....	.75	.84	....	....	....	....	.78	....
33-33.9	....	....	....	....	....	....	....	$ .84	....	....	$ .81	....	....	.82	.82	....	.76	.86	....	....	....	....	.79	....
34-34.9	....	....	....	....	....	....	....	.85	....	....	.82	....	....	.85	.83	....	.77	....	....	....	....	....	.80	....
35-35.9	....	....	....	....	....	....	....	.86	....	....	.84	....	....	....	.85	....	....	....	....	....	....	....	.82	....
36-36.9	....	....	....	....	....	....	....	.88	....	....	.86	....	....	....	.86	....	....	....	....	....	....	....	.83	....
37-37.9	....	....	....	....	....	....	....	.89	....	....	.87	....	....	....	.87	....	....	....	....	....	....	....	.84	....
38-38.9	....	....	....	....	....	....	....	....	....	....	.88	....	....	....	.89	....	....	....	....	....	....	....	....	....
39-39.9	....	....	....	....	....	....	....	....	....	....	.90	....	....	....	....	....	....	....	....	....	....	....	....	....

Playa Del Rey prices f.o.b. their pipe line. Elwood Terrace prices f.o.b. ship. All purchasing companies met the above prices.

Market Record of Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforsheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended Nov. 16 Sales	Week ended Nov. 16 High	Week ended Nov. 16 Low	Week ended Nov. 16 Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends Paid in 1934	1934 High	1934 Low	1933 High	1933 Low
77¾	48½	5,900	76¾	74½	74½	Amerada Corp.	788,675	N.P.	50cQ	10-31-35	$2.00	55⅝	39	47⅝	18½
28	20½	19,800	25½	23½	24⅞	Atlantic Refining	2,664,904	$25	25cQ	12-16-35	1.00	35¼	21½	32½	12⅝
12½	5⅞	48,400	12½	11¼	12½	Barnsdall Corp. A	2,195,397	$5	....	5-11-31	....	10	5⅞	11	3
15¾	3⅜	83,400	15¼	14	14⅝	Columbia Gas & Elec.	11,610,036	N.P.	20c	11-15-35	‡ .25	19¼	6⅝	28⅛	9
10½	6½	54,600	9¾	9	9¾	Consolidated Oil Corp.	13,996,072	N.P.	14c	10-31-34	.42	14¼	7¼	15¾	5
28¼	15⅛	53,700	28¼	25	28¼	Continental Oil of Delaware	4,682,722	$5	25c	10-31-35	.50	22¾	15¾	19⅝	4⅞
21	11¾	17,000	21	19	20⅞	General Asphalt	387,149	$10	25c	12-17-35	....	23½	12	27	4⅝
4⅜	1½	18,700	4⅜	4	4⅜	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	5⅝	2½	7⅜	1⅞
1⅞	⅜	1,000	¾	¾	¾	Louisiana Oil Refining	1,302,158	N.P.	....	.....	....	3⅜	¾	4	⅝
16⅝	9½	31,300	16⅝	15½	16⅝	Mid-Continent Petroleum	1,857,912	$10	25c	12-2-35	.50	14¾	9⅛	16	3¾
20⅞	9	1,600	18⅛	16½	17½	National Supply of Delaware	382,591	$25	....	5-15-31	....	21⅛	10	28⅝	4
14⅛	9¼	21,900	12	11⅛	11¾	Ohio Oil Co.	6,563,377	N.P.	15cSA	12-14-35	.45	15⅞	8½	17⅝	4¾
11⅝	6¾	7,100	10	9¼	9¾	Pacific Western Oil	1,000,000	N.P.	40c	11-30-34	.40	9⅜	5½	9½	3
1½	½	800	1¼	1⅛	1¼	Panhandle P. & R.	198,770	N.P.	....	.....	....	2½	⅝	4¼	⅜
37⅝	13¾	55,600	36⅞	34⅝	36½	Phillips Petroleum	4,154,687	N.P.	25c†	11-30-35	1.00	20¾	13⅜	18¾	4¾
12¼	6½	13,100	12¼	11⅝	12	Plymouth Oil Co.	1,050,000	$5	25c	3-30-35	75c & 4% Stk.	16¾	7¼	17⅝	6¾
12¼	5⅞	38,200	12¼	11¼	12	Pure Oil Co.	3,038,370	N.P.	....	9-1-30	....	14⅞	6⅛	15⅜	2½
47¼	29½	400	47¼	46¾	47¼	Royal Dutch N. Y. shares	fl. 503,642,000	fl. 100	$1.70	8-1-35	1.35	39½	28⅝	39¾	17⅝
35⅞	20¾	7,100	33⅜	31½	32½	Seaboard Oil of Delaware	1,244,283	N.P.	15cQ†	12-14-35	1.00	38⅜	20¾	43⅜	15
14⅛	5½	59,700	14⅛	11⅞	13⅞	Shell Union Oil	13,070,625	N.P.	....	6-30-30	....	11½	6	11⅝	4
111	63⅛	5,100	111	107¼	108½	Shell Union Oil pfd.	400,000	$100	....	7-1-31	....	89	57	61	28½
18¾	4¾	8,900	5⅛	4⅞	5	Simms Petroleum	461,688	$10	1.25 liq.	10-18-35	.55	17⅛	7¼	12⅜	4⅞
17	6½	4,300	16⅝	15	16⅛	Skelly Oil	1,008,514	$25	....	12-15-30	....	11½	6	9⅞	3
15¾	10⅝	73,000	12⅝	11¾	12⅝	Socony-Vacuum	31,154,379	$25	15cQ	9-16-35	.60	19⅞	12½	17	6
38⅞	27¾	18,900	38¾	37	38¾	Standard Oil of California	13,102,900	N.P.	25c	12-15-35	1.00	42⅞	26½	45	19½
28¾	23	28,800	28¾	27⅞	28⅝	Standard Oil (Indiana)	15,215,677	$25	25cQ	12-16-35	1.00	32¾	23¼	34	17
32	20	500	27	24	27	Standard Oil of Kansas	200,000	$10	50cQ	10-31-34	2.00	41	26	39⅞	12¾
50½	35¾	61,500	50⅜	48⅝	49⅞	Standard Oil of New Jersey	25,856,081	$25	50cSA†‖	12-16-35	1.25	50⅛	39¼	47½	22¾
75½	60½	2,200	75¼	73	75¼	Sun Oil	1,733,013	N.P.	25c¶	12-16-35	$1 & 9% Stk.	74¼	51½	59	35
25⅛	16½	70,100	25⅛	22⅝	25⅛	Texas Corp.	9,486,417	$25	25cQ	10-1-35	1.00	29⅜	19⅝	30⅛	10¾
9¼	3¼	6,400	8⅞	8¼	8¼	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	....	6½	2½	6½	1⅜
12	7⅝	31,700	12	11⅛	12	Tide Water Associated	5,632,136	N.P.	....	2-16-31	....	14⅜	8	11¾	3½
104⅛	84	2,300	104⅛	102	104⅛	Tide Water Associated pfd.	626,222	$100	$1.50Q	10-1-35	§8.50	87	64½	65¼	23½
21	14¾	12,800	21	20¼	20⅞	Union Oil of California	4,386,070	$25	25cQ	11-9-35	1.00	20½	11½	23⅜	8½
26½	20⅞	3,700	24¼	23¾	24	Union Tank Car Co.	1,200,000	N.P.	30cQ	12-2-35	1.20	25¾	15⅝	22¾	10½
2⅝	1	800	2⅛	2	2⅛	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¾	2	5½	2

*Ex-dividend. †Plus extras. ‡Payable in preferred stock. §On account of accumulation. ‖Dividend 4/75 Mission Corp. paid 3-1 5-35. ¶and 7 per cent stock.

Market Record of Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforsheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended Nov. 16 Sales	Week ended Nov. 16 High	Week ended Nov. 16 Low	Week ended Nov. 16 Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends Paid in 1934	1934 High	1934 Low	1933 High	1933 Low
42½	30½	425	42½	41½	42½	Buckeye Pipe Line Co.	200,000	$50	75cQ	12-14-35	$3.00	38	26	29¾	25
4¼	1⅝	8,800	3½	2¾	3⅜	Carib Syndicate	799,020	25c	....	.....	....	5½	1½	7¾	¼
157	115	200	126	125	125	Chesebrough Mfg. Co.	120,000	$25	$1Q†	9-27-35	11.50	150	116	129	71
3¼	⅜	98,300	3	2⅝	3	Cities Service	37,804,394	N.P.	....	6-1-32	....	4¼	1¼	6¼	1½
2⅛	½	3,300	1	⅞	1⅛	Colon Oil	2,200,000	N.P.	....	.....	....	3¼	½	4	¼
⅞	¼	200	¼	¼	¼	Cosden Oil	399,687	$1	....	.....	....	3⅞	½	3⅞	1¾
23½	10	11,100	22⅜	21¼	22¼	Creole Petroleum	6,974,356	$5	....	.....	....	14⅜	9⅝	12	4¾
6⅝	4	500	6½	6½	6½	Darby Petroleum	509,696	$5	25c	7-15-35	.50	7½	4⅛	8	2⅛
2	¾	400	1⅝	1⅝	1⅝	Derby Oil & Refining	263,162	N.P.	....	.....	....	2¼	1	2¾	⅞
38	34	50	36	36	36	Eureka Pipe Line	50,000	$50	$1Q	8-1-35	4.00	37	30	41¾	20
74¾	50¼	10,100	69¼	67¼	67¾	Gulf Oil Corp.	4,538,101	$25	....	10-1-31	....	76¾	49¾	62	24
64	44	5,800	62	60	60¼	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	10-1-35	§1.25	49½	33¼	105½	40
22½	15⅜	12,800	22⅛	20¾	20⅞	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-2-35	.92½	17⅞	12⅝	15⅞	6½
6	3⅝	700	5¾	5⅜	5½	Indiana Pipe Line	300,000	$10	15cSA†	11-15-35	.35	6⅞	3⅝	8	3⅛
39¾	28	29,600	38⅞	37½	37½	International Petroleum	14,247,088	N.P.	$1.25†‡	12-2-35	2.28	33⅜	19⅜	23½	8⅞
9½	4⅜	16,700	9⅜	8⅞	9⅛	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	....	5	2⅛	2¼	⅝
6¾	3½	300	6	5½	6	Lion Oil Refining	270,000	N.P.	....	10-27-30	....	6	3⅜	9½	1¼
10⅞	4½	6,600	10⅞	10¼	10⅝	Lone Star Gas	5,382,723	N.P.	15cSA	8-15-35	‖ .16	8⅜	4¼	11⅞	4¾
5½	4⅛	1,800	5	5	5	Mountain Producers	1,682,182	$10	15cQ	10-1-35	.60	5½	4	6½	2½
20	11¾	5,600	19¼	18	18½	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-35	1.00	18⅛	13⅛	20	10
10½	6¾	1,000	9½	9¼	9¼	National Transit	509,000	$12.50	40cSA	6-15-35	.75	9½	7	10	5½
3¼	2	1,100	2⅞	2⅝	2⅞	New Bradford Oil	1,445,202	$5	10cSA	9-16-35	.20	2½	1¾	2⅛	½
2⅛	1	800	1⅞	1¾	1¾	New Mexico and Arizona	1,000,000	$1	....	.....	....	2¾	1	1⅞	½
4⅞	3	100	4¼	4¼	4¼	New York Transit	100,000	$5	15cSA	4-15-35	.30	4¾	3	4⅞	3
8	5¼	300	3⅜	3⅛	3¼	Northern Pipe Line	120,000	$10	25cSA	2-2-36	.50	7	4⅝	6⅛	4¼
3½	1¼	13,500	3⅜	3⅛	3¼	Pantapec Oil	1,608,700	N.P.	....	.....	....	2⅝	⅞	3¾	½
1½	⅝	400	1⅛	1	1⅛	Ryan Consolidated	296,931	N.P.	....	.....	....	3⅜	⅞	4¼	⅝
7½	5½	1,200	6⅞	6⅝	6¾	Salt Creek Producers	1,496,859	$10	20cQ	11-1-35	.80	7⅞	5½	9¼	3½
29	21⅝	3,100	28	27	28	South Penn Oil	1,200,000	$25	30cQ	9-30-35	1.20	26½	17½	22⅛	11
5	3⅞	100	4¾	4¾	4¾	Southern Pipe Line	100,000	$10	15cSA	9-3-35	.25	5½	3½	6	2⅛
52½	44¼	100	44¼	44¼	44¼	Southwest Penna. Pipe Lines	35,000	$50	$1Q	10-1-35	5.00	47	41	43	24½
23¾	18	6,900	23¾	21⅝	23½	Standard Oil of Kentucky	2,604,790	$10	25cQ	3-15-35	1.50	18⅜	14⅝	19¼	8⅜
12	7¾	500	11⅜	11	11	Standard Oil of Nebraska	188,403	$25	....	6-20-34	.50	16⅞	8¼	20½	11
23⅜	11½	8,800	23	18	22⅞	Standard Oil of Ohio	753,740	$25	....	1-3-33	....	28½	12¼	41	15½
2⅞	⅞	7,200	2½	2¼	2⅜	Sunray Oil	1,610,810	$1	....	4-15-31	....	2	1⅛	1½	¼
6⅞	5	1,500	6½	6⅛	6⅜	Texon Oil & Land	336,028	N.P.	15cQ	9-30-35	.90	11	4⅜	13¾	6¼

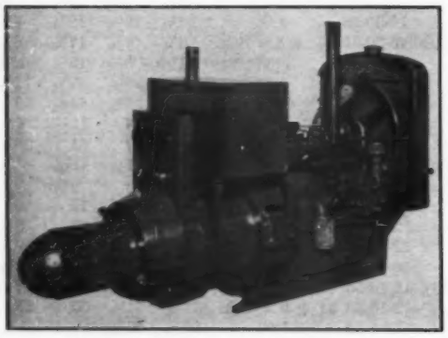
*Ex-dividend. †Includes extras. ‡Payable in Canadian funds. §Includes 50 cents on old $25 par value stock. ‖Payable in preferred stock.

Note.—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

NEW OR IMPROVED EQUIPMENT

"Shield Arc Special" Welder Is Put on Market by Lincoln

A new 200-ampere special-engine-driven "Shield Arc" welder is announced by the Lincoln Electric Co., Cleveland, Ohio. It supplies a uniform current for welding with bare or heavily coated shielded arc-type electrodes in all sizes up to one-quarter inch. The welding current range is from 60 to 250 amperes. The generator is the single-operator variable-voltage type, with completely laminated magnetic circuit and equipped with interpoles. No external reactance or stabilizer is required.



The patented Lincoln dual control of welding current is provided by adjustment of both series and shunt fields. Separate excitation of the generator shunt fields is supplied by an exciter connected on the generator end of the unit. A generator field rheostat and a current regulating switch are mounted in vertical position on a "dead-front" steel control panel. Electrode and ground cable connections of the wing nut type are also in an easily accessible position.

The welder is powered by a Waukesha 4-cylinder engine which delivers 23 horsepower at 1,400 r.p.m., the speed at which the welder is operated. A gear-driven governor maintains proper engine speed at all load conditions.

Bulletins, Booklets and Other Literature for the Trade

Among articles in the current issue of the Watch Tower, published by Chicago Bridge & Iron Works, Chicago, is an interesting one describing the company's new type of Hortonspheroid for low-pressure storage.

The Bastian Blessing Co., 240 East Ontario Street, Chicago, has for distribution a 48-page miniature catalog of its welding and cutting equipment. It calls special attention to the new Rego 8X torch and Rego gas economizer.

The story of "Sta-lastic," a sealing film said to be impervious to propane, butane and other poisonous gases, gasoline, turpentine, crude oil, etc., is told in a bulletin obtainable from Sta-lastic Manufacturing Co., Kansas City, Mo.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., has released a 32-page illustrated bulletin, No. 1,250, on Texrope drives for machine tools, showing 60 typical applications of the V-belt drive to modern machine tools of all kinds.

Kerotest Manufacturing Co., 2525 Liberty Avenue, Pittsburgh, Pa., has issued two informative bulletins. One (bulletin 118) describes the company's newest type gauge shut-off valves made of drop-forged, heat-treated alloy steel, and the other (bulletin 116) ring-joint flange unions made of heat-treated steel forgings.

The Adher-o-scope, a machine for testing the adhesive quality of lubricants, is described in an illustrated bulletin offered by Sperry Products, Inc., Manhattan Bridge Plaza, Brooklyn, N. Y.

Catalog 48, a booklet of 64 pages issued by Goetze Gasket & Packing Co., Inc., New Brunswick, N. J., describes and illustrates the company's line of gaskets and accessories.

A booklet detailing the history, development and industrial uses of a tiny plant called the diatom, from which Celite is made, has just been published by Johns-Manville, 22 East Fortieth Street, New York.

"I Drive Safely," a 62-page booklet published for free distribution by International Harvester Co., 606 South Michigan Avenue, Chicago, in the interest of safety on the highways, should be of help to every motorist.

General Refractories Co., 106 South Sixteenth Street, Philadelphia, Pa., has ready for distribution a pamphlet, "A New Application of the Ritex Process to the Manufacture of Chrome Brick," by R. P. Heuer, director of research for the company.

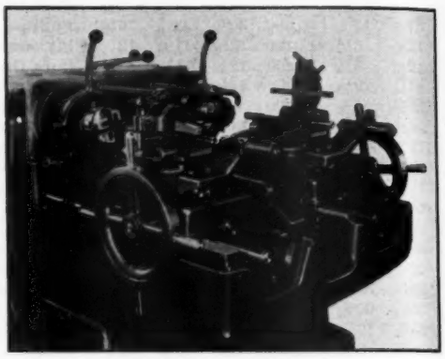
Men Widely Known in the Equipment Field

PAUL R. KING

Portable Rig Co., Houston, Tex., has opened a Tulsa branch office at 310 Thompson Building, to serve as headquarters for the Oklahoma-Kansas division, with Paul R. King as territorial representative.

New Landis Machine Designed to Align and Index Work

The Landis Machine Co., Waynesboro, Pa., has developed a novel fixture for application to its Landmaco threading machines, for threading parts which have a thread on each end and requiring alignment and concentricity of both threads. In addition to providing for alignment the fixture indexes automatically so that both ends can be threaded with one gripping.



The application shown in the illustration, used for threading automobile tie-rods, can be adapted readily to other work of a similar nature. The parts were made of steel forgings approximately 15 inches in length, threaded on each end to a length of 1¾ inches. The fixture provides for maintaining concentricity of the pitch diameters of both threads and with the center line of the work within .005 inch.

The forgings are centered and the surfaces to be threaded turned and ground previous to the threading operation. A ground V block at the front of the work-holding fixture serves properly to locate and center the front end of the forging. Alignment of the rear end is effected by a manually operated dead center, which is under spring pressure and which moves out of the way when the forging is clamped in position.

With the work resting on the ground V block at the front end and the rear end aligned with a center, the operator drops a self-compensating clamp on the work to hold it in position. A compensating wedge on the base of the fixture, actuated by the clamping device, moves over under the pad forged intergrally with the bar, seating the bar firmly and thus maintaining the alignment established by the center.

Upon completion of the first thread the carriage is withdrawn by means of the handwheel, the backward movement of the carriage automatically indexing the work-holding fixture 180 degrees. A lock bolt automatically locks the fixture in position after each indexing. In this manner both ends of the work are threaded in one gripping. The fixture can be removed and the machine converted into a standard Landmaco threading machine by applying a standard carriage and vise.

Oliver Pre-Coat Filter

Clarification of fuel oils and continuous contact filtration is effected by the Oliver Pre-Coat filter, placed on the market by Oliver United Filters, Inc., 33 West Forty-second Street, New York. This operation is unique in that a totally clean filter surface is exposed with each revolution of the drum. This drum is coated with a heavy homogeneous layer of filter aid and rotates in the material to be clarified. Vacuum applies as on the Standard Oliver, causing the liquor to be drawn through the heavy layer of filter aid, the

solids being deposited on the outer surface. This deposit together with a thin layer of filter aid is continually removed by a special mechanism, thus presenting a fresh surface for rapid filtration. High rates are maintained over long periods and in addition emulsions can be broken and unusual separation of colloids accomplished. Pre-Coating is relatively infrequent owing to the small quantity of filter aid removed during each revolution and high filter aid economy results.

Improved Generator Perfected for Oil Industry Lighting

A new and improved 4 KW turbo generator, designed specially for oil industry service is offered by Moon Manufacturing Co., 112 North Jefferson Street, Chicago, builder of lighting plants. This model, the type 61-C, is specially adaptable for use in drilling rigs, refineries, compressor stations, leases and camps. Among its important features are the new type of rotor construction, the larger shaft, automatic overspeed valve

and special carbon ring packing. When desired, an automatic circuit-breaker can be provided.

There is an increasing demand for more light on drilling operations, which in turn calls for a larger generator, and the type 61-C has been built to meet this demand.

Here and There With Men Who Manufacture Equipment

Felt Products Manufacturing Co., 1508 Carroll Avenue, Chicago, has appointed Joseph M. Bandish director of sales of its metallic packing division.

Allen S. Hicks, representing Doheny Stone Drill Co., Los Angeles, has been transferred from Houston, Tex., to Tulsa, where he will reside at 3306 South Zunis Avenue.

The Union Wire Rope Corp., Tulsa, has appointed H. M. Humphrey to its sales staff, to assist H. E. Frye in covering the Kansas oil fields. Mr. Humphrey's headquarters will be in Great Bend, Kans.

Hancock Valve Division of the Consolidated Ashcroft Hancock Co. of Bridgeport, Conn., has appointed Moorlane Co. and Frick-Reid Supply Corp., both of Tulsa, as stock-carrying jobbers.

Worthington Pump & Machinery Corp. has begun construction of an additional machine shop building at its Buffalo, N. Y., works. This extension will cover a floor area of 75,000 square feet, adding materially to the plant facilities for the manufacture, assembly and testing of its products.

W. S. Proctor and Alvin B. Calkins, of the Bettis Sales Co., Houston, Tex., have returned from California, where they studied new products of Regan Forge & Engineering Co., which their organization represents in the Mid-Continent.

Griscom-Russell Co. announces appointment of Farrell & Jones, 10 High Street, Boston, Mass., to handle sales of G-R evaporators, generator air cooler, fuel oil heaters, and heat transfer equipment.

George R. Woods, manager of the export office of Regan Forge & Engineering Co. in New York recently visited the company's plant in San Pedro, Calif., to study the manufacture of its new products. Mr. Woods visited California oil fields also to familiarize himself with the actual use of this equipment.

Struthers-Wells Co., Warren, Pa., now has an office in the Union Building, 1838 Euclid Avenue, Cleveland, Ohio. B. W. Rogers and P. M. Kline are in charge.

A. O. Smith Corp., Milwaukee, Wis., has opened a district sales office in the Niels Esperson Building, Houston, Tex., with Henry A. Bourne, Jr., as manager.

Lee S. Abbott has been made Mid-Continent district manager for the paint division of Aluminum Industries, Inc., Cincinnati, Ohio. Mr. Abbott will be located in the Wright Building, Tulsa.

Fred J. Spurlock, formerly with Axelson Manufacturing Co. has joined the sales department of Mid-Continent Supply Co., Fort Worth, Tex. He will be in charge of pumping equipment sales, with headquarters in Mid-Continent's offices in Houston, Tex.

William J. Gibney, former vice president of Bingham & Taylor Corp., Buffalo, N. Y., has joined the sales force of Pittsburgh Equitable Meter Co., and its subsidiary, Merco Nordstrom Valve Co. He will work from the Buffalo office.

Oil Well Supply Enlarges Its Sales Engineering Force

Lloyd E. Tracy, Gerritt I. Wyckoff and S. L. Dueger have been added to the sales engineering force of the Oil Well Supply Co. as specialists in sucker-rods, pull-rods, and polished rods. They will co-operate with operators and engineers in studying well corrosive and stress conditions in order to recommend rods for each installation.

Mr. Tracy, who will cover Texas, Arkansas and Louisiana, had four years at Southeast Missouri State Teachers College and University of Missouri, majoring in general science. Mr. Wyckoff, who will cover Oklahoma City, Seminole, Ada and the outlying district, received his degree of mechanical engineer at Stevens Institute of Technology.

G. I. Wyckoff S. L. Dueger L. E. Tracy

Mr. Dueger, who will cover Kansas, graduated from Carnegie Institute of Technology with a B.S. in mechanical engineering. All have acquired wide practical experience since leaving school.

Prevents Scale From Forming Without Special Equipment

The Dearborn tannin brick treatment, developed by Dearborn Chemical Co., 310 South Michigan Avenue, Chicago, is designed for use wherever water is used as a cooling agent for diesel and gas engines, compressors, condensers and in any open or closed systems where central treating-tank equipment is not available. The treatment is applied directly to the circulating system, offering a convenient method of conditioning the cooling water without the use of special equipment or special supervision.

The treatment acts as a colloidal reagent. It tends to keep scale-forming material in solution. It also acts as a coagulant in combining with the calcium and magnesium which may eventually be precipitated in part by the loss of carbon dioxide due to the high temperature of the water. The building up of scale is prevented, and any precipitated material takes the form of a sludge which accumulates in the cooling pond or reservoir. The treatment has a definite disintegrating action on old scale or rust deposits.

New Robinson Orifice Fitting Handles Gases and Liquids

A new orifice fitting for handling gases and liquids is announced by Robinson Orifice Fitting Co., of Los Angeles, Calif. The main operating mechanism, entirely enclosed in the upper chamber, consists of a heavy stationary screw and a follower nut, pivoted to the orifice plate carrier. This simple device raises or lowers the orifice

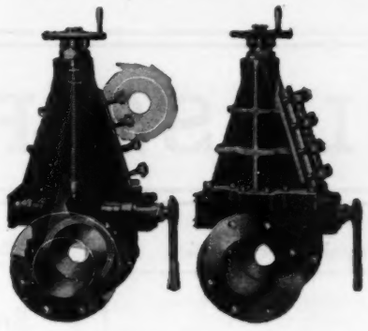


plate carrier and forces the carrier into its position in the lower seats. When the plates are to be inspected or changed, the carrier is lifted completely out of the upper chamber and is held in a convenient position for servicing.

The valve seats are covered in both open and closed positions. A full-floating plug valve is lubricated with an equalized pressure system. It is never necessary to lift the carrier manually because it is supported at all times. The orifice fitting has a quick-change cover plate. Positive control of the orifice plate is maintained under all pressures. An indicator definitely shows the operator when the orifice plate is positioned in the pipe-line bore. The orifice plate may be locked in place, preventing unauthorized changing of orifice plate setting.

Gardner-Denver Power Pump Introduces New Features

Improvements in pump construction characterize the 7¾x16 type EXQ power pump, announced by Gardner-Denver Co., Quincy, Ill., and distributed by Continental Supply Co. The frame is a one-piece semisteel casting with integral crosshead guides and main and jackshaft bearing supports, to insure alignment. Reinforcing ribs are placed where stresses from shock load are greatest. An oil stop-head and mud stop-head in combination prevent entrance of dirt and mud into power end.

The continuous-type herringbone-gear drive having special oil-field type teeth is designed to withstand heavy overloads. The gear is a special alloy steel casting and the pinion is an alloy steel forging. The pinion shaft has extensions on both ends for the driving sprocket or sheave. These extensions are turned to close tolerance and keywayed. The pinion shaft is carried on two grease-packed Hyatt roller bearings allowing the herringbone pinion to float in alignment with the main gear. The herringbone gear is supported in position by grease-packed Timken double-row bearings. Both pinion shaft and main shaft are of sufficiently large diameter to eliminate deflection, thus insuring accurate alignment of gears and bearings under maximum load. All grease connections are easily accessible from outside the frame.

The connecting-rods are heat-treated steel castings with renewable liners for the eccentric end and high lead bronze crosshead pin-boxes with wedge adjustment for the crosshead ends.

Engineers Seek Recognition Through Support of Societies

Unity in the approach to the problem of establishing adequate means for recognizing the engineer as a professional man, is emphasized in the 1935 annual report of the Committee on Professional Recognition of the Engineers Council of Professional Development, soon to be available in printed form, which attempts to clarify its position on the three avenues toward recognition that now exist—the legal sanction by professional registration, the professional degree of the engineering school, and admission to membership in one of the major engineering societies. Conrad N. Lauer, past-president, The American Society of Mechanical Engineers, is chairman of the Committee on Professional Recognition.

The report which was adopted by the Engineers Council for Professional Development, is part of its 1935 annual report. The council is a conference of engineering bodies organized to enhance the professional status of the engineer through the cooperative support of those national organizations directly representing the professional, technical, educational and legislative phases of an engineer's life. The participating bodies comprising the Engineers Council for Professional Development are: American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, American Institute of Electrical Engineers, Society for the Promotion of Engineering Education, American Institute of Chemical Engineers, and National Council of State Boards of Engineering Examiners.

Seek Water-Flooding Permit

The Texas Co. has filed application with the Railroad Commission of Texas for a permit to experiment with water drive on its R. M. (Fanny) Lowe lease in the George Stubblefield Survey No. 622 in the heart of the old Fry pool in Brown County. The company is now producing 29 of the 85 wells it previously drilled on the lease, the wells making around 28 bbls. per day from the Fry sand found between 1,200 and 1,300 feet.

The lease was first repressured with gas, using nine key wells, and for a long time results were favorable. However, repressuring finally failed and other experiments were tried. Four wells were acidized, without results; two wells were heavily treated with caustic soda but failed to respond. Five wells were shut, but shooting also proved of no avail. Several new tests were then drilled to find out whether or not the field had actually been depleted. These new wells only produced about 2 bbls. each, ample proof of depletion, and the company now desires trying to flood the pool with water in an effort to extract more oil from the sand. The hearing will come up in Fort Worth on November 25. The Sinclair Prairie Oil Co., E. L. Smith Oil Co., Amerada Petroleum Corp. and others hold adjoining leases in the pool. These and many others will be greatly interested in the experiment.

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FOR SALE full ½ int. in 3 S. W. Ind. oil and gas structures and 3 wells to be drilled 1800', 1100' and 900'. Very best geology. $9500. F. M. Pierson, P. O. Drawer 748, Terre Haute, Indiana.

Leases—Production

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

Royalties and leases in all fields producing and non-producing, Kans., Okla., Tex. Get my big list before buying. James R. Haynes, Grantville, Kansas.

NOTICE OF SALE
Under orders of the Nevada County, Arkansas, Chancery Court, the undersigned as Commissioner of said Court, will sell to the highest bidder on the 30th day of November, 1935, at the Courthouse in Prescott, Arkansas, Oil and Gas Lease covering eighty acres in Irma Field, Nevada County, Arkansas, seven producing wells, and all equipment necessary to operate. J. M. Whittemore, Commissioner.

100 ACRE proven oil, gas lease. Will bear investigation. Will give half interest for financial assistance on first well. Box 451, Center, Texas.

EXPERIENCED Operator A-1 Reference has 60,000 acres solid, one of New Mexico's most attractive structures two wells started, wishes capital to help develop large acreage for test or will sell and consider small shallow production part payment. Write P. O. Box 286, Albuquerque, New Mexico.

LEASES in southern Oklahoma. For particulars write E. J. KOENIG, Kirby Building, Dallas, Texas.

NEW TEN YEAR oil and gas leases in DeWitt, Karnes or Atascosa Counties, Texas. Large or small tracts, priced at 60 cents per acre. Write to
H. H. WHITE,
353 W. Josephine St., San Antonio, Tex.

Leases—Production

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, New Mexico.

WANTED
DRILLING PROPOSITIONS
Will finance dev. of approved loc. or drlg. test on large acge. provided good geol. full details to P.O. Box 1412, Pittsburgh, Pa.

NEW LEASE 70 ac. 18-6N-2W and 100 ac. 11-6N-3W, McClain County, Okla. Joe P. Crawford, fee owner, Oklahoma City, Oklahoma.

WANTED — Shallow production or proven acreage, either oil or gas. Give complete description and price. Address Box G-914, The Oil and Gas Journal, Tulsa, Oklahoma.

2,830 ACRES cut over land in LeFlore County in seven different tracts, sell for $1.50 per acre. You get all mineral, gas and oil rights except on 360 acres which government has reserved. Abstract and taxes paid. Cash—no trades. Luther Calahan, Idabel, Oklahoma.

Maps

OIL MAPS for ONE DOLLAR each. Paper, ownership maps, size 17x22 inches, on over 200 Texas counties. Send $1.00 each for maps you need. LOGAN MAP CO., Box 1785, FORT WORTH, TEX.

NEW UP-TO-DATE LEASE and fee ownership maps; Yoakum, Terry, Cochran, Gaines counties, Tex. ZINGERY OIL MAP CO., Fort Worth, Texas.

LONG LAKE and CAYUGA subsurface structure maps by NEIL McDOWELL. Latest lease and fee ownership. ZINGERY OIL MAP CO. Ft. Worth, Tex.

NEW OIL development maps. Every county in Oklahoma. Each 19x26, show sections, wells, dry holes, depths. Many show seismograph highs. Per county, $1.00. W. H. Whaley, Distributor, Alexander Hotel, Tulsa, Oklahoma.

Financing

PROSPECTUSES prepared and deals shaped up for registration or exemption under Federal Security Act. Fee basis. John Morris, Seventh Floor, 1237 Market St., Philadelphia, Pa.

OIL AND MINING Companies organized and financed. Moderate charges. JAMES B. MURROW, 299 Broadway, New York.

JAMES E. MILLER, 604 W. Seventh St., Tulsa, Okla., will aid in financial marketing problems. Fee basis.

LOAN WANTED
Want to get in contact with party familiar with the oil and gas business who will loan $20,000.00 to be paid back in monthly installments out of present income from the sale of oil and gas. Will secure the loan by mortgage on income producing properties worth several times that amount. Address Box G-910, The Oil and Gas Journal, Tulsa, Oklahoma.